

REGULATION OF WHITE PHOSPHORUS WEAPONS IN INTERNATIONAL LAW



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1 Introduction

1.1 Aims of the dissertation

The aim of this master's dissertation is to clarify how white phosphorus (WP) weapons are regulated under international law, particularly in regard to the main applications of WP weapons as a means of warfare. I will discuss the status of WP weapons and its main applications in general terms in relation to the Chemical Weapons Convention (1993), the Convention on Certain Conventional Weapons (1980) and customary international humanitarian law.¹ If it becomes evident that there is significant disagreement and lack of clarity about the legal regulations of WP weapons – or if it seems there may be a significant gap between the actual legal regulations and the opinion about WP weapons among states or in the general public – then I will also briefly comment on how this gap may be closed through treaty regulation in the future.

I will not discuss the relevance of the international regulations on poison and poison gas, which features in some of the legal analyses of WP weapons.² There are two reasons for this: First, there is a need to limit the scope of this dissertation. Second, there does not seem to be any significant disagreement that WP weapons do not fall under the definitions of poison or poisonous gas in the relevant conventions.³

I will use some specific historical cases to exemplify the application of WP weapons, most importantly the use of WP by the US military in Fallujah in 2004 and by

¹ *Convention on the prohibition of the development, production, stockpiling and use of chemical weapons and on their destruction*, 1993; *Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May be Deemed to be Excessively Injurious or to Have Indiscriminate Effects*, 1980.

² I. J. MacLeod and A.P.V. Rogers, "The Use of White Phosphorus and the Law of War", in *Yearbook of International Humanitarian Law*, Volume 10 (2007): 79-82; Joseph D. Tessier, "Shake & Bake: Dual-Use Chemicals, Contexts, and the Illegality of American White Phosphorus Attacks in Iraq", *Pierce Law Review*, Volume 6, No. 2, 2007: 326-327; Steven Haines, "Weapons, means and methods of warfare", in Elisabeth Wilmschurst and Susan Breau (eds.), *Perspectives on the ICRC Study on Customary International Law* (Cambridge: Cambridge University Press 2007), 259.

³ The relevant conventions are the following: *Declaration (IV,2) concerning Asphyxiating Gases*, The Hague, 29 July 1899; *Convention (IV) respecting the Laws and Customs of War on Land and its annex: Regulations concerning the Laws and Customs of War on Land*, The Hague, 18 October 1907; *Protocol for the Prohibition of the Use of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare*, Geneva, 17 June 1925.

the Israeli military in Gaza 2008-2009 (*Operation Cast Lead*). These are important examples of how WP has been used as a means of warfare in the past decade. I will not, however, attempt to draw conclusions about the legality of these concrete examples. The reason is that I attempt to comment in this dissertation on the regulation of WP weapons in general, not in specific cases.

1.2 Literature

The most cited article in this dissertation is I.J. MacLeod and A.P.V. Rogers' "The Use of WP and the Law of War" (2007).⁴ One of the authors is a legal expert and the other holds a PhD in pathology as well as an LL.M in international law, which increases the credibility of the arguments of the article also as far as the medical conclusions are concerned.⁵ The immediate backdrop of the article is the use of WP in Fallujah, Iraq, in 2004 and in Lebanon in 2006. The article comments on the specific applications in these two conflicts, but mainly deals with the international regulation of WP in general.

I also frequently cite Roman O. Reyhani's article, "The Legality of the Use of White Phosphorus by the United States Military during the 2004 Fallujah Assaults" (2007), and Joseph D. Tessier's article "Shake & Bake: Dual-Use Chemicals, Contexts, and the Illegality of American White Phosphorus Attacks in Iraq" (2007).⁶ Both articles deal mainly with the use of WP in Fallujah, but also make observations about the relevant international legal framework in general. Reyhani's article, in particular, contains certain viewpoints that deviate from those of MacLeod and Rogers.

There is a very extensive volume of works that deal with the law of armed conflict in general that could be cited in this dissertation. For obvious practical reasons, it has been necessary to limit this number. I refer mainly to the treatment of WP in Yoram Dinstein's *The Conduct of Hostilities under the Law of International Armed Conflict* and Gary D. Solis' *The Law of Armed Conflict*.⁷ Both treatments of WP are

⁴ MacLeod and Rogers, "The Use of White Phosphorus and the Law of War".

⁵ MacLeod and Rogers, "The Use of White Phosphorus and the Law of War", 75. Authors' background in footnote 1.

⁶ Roman O. Reyhani, "The Legality of the Use of White Phosphorus by the United States Military during the 2004 Fallujah Assaults", *bepress Legal Series*, Paper 1959 (Berkeley: Berkeley Electronic Press, 2007), accessed on 27 May 2011, <http://law.bepress.com/expresso/eps/1959>.

⁷ Yoram Dinstein, *The Conduct of Hostilities under the Law of International Armed Conflict*, second edition (Cambridge: Cambridge University Press 2010); Solis, *The Law of Armed Conflict*.

short but concise and informative, and clearly express views that I compare with those of the above-mentioned.

Certainly, no treatment of the law of armed conflict can ignore the 2005 study by Jean-Marie Henckaerts and Louise Doswald-Beck et al., *Customary International Humanitarian Law*, which presents a comprehensive set of rules of customary international humanitarian law.⁸ This study (hereafter: “The 2005 ICRC Study”) is widely regarded today as the standard reference work of customary international humanitarian law. It is central in this dissertation’s treatment of the rules that may be relevant for WP weapons.

I also make use of the report by Human Rights Watch on Operation Cast Lead in Gaza, *Rain of Fire: Israel’s Unlawful Use of White Phosphorus in Gaza* (2009).⁹ This report is an attempt at an objective investigation into the use of WP weapons in Gaza, but it has been subjected to strong criticism, particularly from Israeli officials.¹⁰ However, the report documents important facts about the use of WP in a specific military context – including with pictures of such use – and makes statements about the legal status of WP weapons that are of interest to this dissertation. Another report of interest is the so-called “Goldstone report”, which is the report of a commission mandated by the United Nations Human Rights Council to investigate Operation Cast Lead in Gaza.¹¹ This too, has been heavily criticized by the Israeli government and others.¹² It was, however, endorsed by the majority of the Human Rights Council.¹³ It contains important expert views about the legality of WP weapons.

⁸ Jean-Marie Henckaerts and Louise Doswald-Beck, with contributions from Carolin Alvermann, Knut Dörmann and Baptiste Rolle, *Customary International Humanitarian Law, Volume I: Rules*, International Committee of the Red Cross (Cambridge: Cambridge University Press 2005).

⁹ Human Rights Watch, *Rain of Fire: Israel’s Unlawful Use of White Phosphorus in Gaza* (New York: Human Rights Watch 2009).

¹⁰ Guy Azriel: “Israel, Hamas investigations into Gaza incursion lacking”, *CNN Report*, 11 April 2010, accessed on 17 August 2011, [http://articles.cnn.com/2010-04-](http://articles.cnn.com/2010-04-11/world/mideast.conflict.report_1_civilians-israeli-forces-gaza?_s=PM:WORLD)

[11/world/mideast.conflict.report_1_civilians-israeli-forces-gaza?_s=PM:WORLD](http://articles.cnn.com/2010-04-11/world/mideast.conflict.report_1_civilians-israeli-forces-gaza?_s=PM:WORLD). Yigal Palmor, spokesman for the Israeli Foreign Ministry, is reported to have said that “[...] Human Rights Watch got their facts and figures wrong” and displayed a “[...] lack of professional integrity and they are therefore not to be taken as an authority to judge and evaluate IDF operations.”

¹¹ Richard Goldstone et al., *Human Rights in Palestine and Other Occupied Arab Territories: Report of the United Nations Fact-Finding Mission on the Gaza Conflict*, A/HRC/12/48, 25 September 2009.

¹² Danna Harman, “Goldstone panel colleagues rebut judge’s mea culpa”, *Ha’aretz*, 15 April 2011, accessed on 17 August 2011, <http://www.haaretz.com/print-edition/news/goldstone-panel-colleagues-rebut-judge-s-mea-culpa-1.356045>. Yigal Palmor, a spokesman for the Foreign Ministry, is reported to

As regards the medical information, I have relied on information published in medical journals, particularly a case report on a patient with WP burns, published in *The Lancet* (2010), and an article about burn injuries during armed conflicts, published in the *Annals of Burns and Fire Disaster* (2007).¹⁴

Finally, I cite several newspaper articles in this dissertation. These are used to provide facts about specific situations and viewpoints when this is relevant, and as indications of the view of states and the general public on certain relevant issues.

1.3 Structure of the Text

Chapter 2 describes the most important attributes, military applications and medical effects of WP, and also presents a brief historical background. These facts form the basis for the discussion in the succeeding chapters, which deal with the legal issues connected with regulation of WP weapons that may be contained in relevant conventions or in relevant rules of customary international humanitarian law. In chapter 3, I discuss how WP weapons may be regulated by the Chemical Weapons Convention, as toxic chemicals or riot control agents. In chapter 4, I discuss how WP weapons may be regulated in the Convention on Certain Conventional Weapons, specifically Protocol III on incendiary weapons. In chapter 5, I discuss how certain rules of customary international humanitarian law may apply to WP weapons. I specifically focus on (1) the principle of no unnecessary suffering or superfluous injury, (2) the principle of distinction between civilian and military targets, and (3) the so-called Martens clause.

Chapter 6 presents general comments on the legality of WP weapons and its main applications, based on the conclusions of the previous chapters. Finally, chapter 7 discusses briefly whether there may be a case for stronger international regulation of WP weapons.

have said about the Goldstone report that “[t]he whole process was deeply tainted by political bias and an extremist dominance over the U.N. Human Rights Commission by nondemocratic countries”.

¹³ UN Human Rights Council resolution A/HRC/RES/S-12/1, 12th Session, 16 October 2009, part B, operative paragraph 3, accessed on 10 August 2011, <http://daccess-dds-ny.un.org/doc/RESOLUTION/LTD/G09/168/07/PDF/G0916807.pdf?OpenElement>

¹⁴ Loai Nabil Al Barqouni, Sobhi I. Skaik, Nafiz R. Abu Shaban, Nabil Barqouni, “Case Report: White Phosphorus Burn”, *The Lancet* 376 (2010): 68; B.S. Atiyeh, S.W.A. Gunn, S.N Hayek, “Military and Civilian Burn Injuries during Armed Conflicts”, *Annals of Burns and Fire Disasters*, Vol. XX, No. 4 (December 2007), accessed on 1 June 2011, http://www.medic.com/annals/review/vol_20/num_4/text/vol20n4p203.asp (no page numbers). *The Lancet* is one of the world’s most respected, oldest and leading medical journals.

2 White Phosphorus: Military Applications and Medical Effects

2.1 What are White Phosphorus Weapons?

WP is a common chemical substance, which has both military and non-military applications. In the latter category, one can find WP used in fireworks, food additives, fertilisers, and cleaning compounds, to mention a few.¹⁵ In the former category, WP is primarily used to provide smoke or as an incendiary, i.e. to set fire to objects or persons. A case report in the medical journal *The Lancet* describes WP as follows:

White phosphorus is a smoke-producing, waxy, yellow transparent combustible solid, which is used mainly in military and industrial settings. In the presence of oxygen, it spontaneously ignites with a yellow flame and produces dense smoke; it extinguishes only when deprived of oxygen or totally consumed. On contact with exposed skin, white phosphorus produces painful chemical burns.¹⁶

There are three common types of WP-containing projectiles: (1) Flares on parachutes for illumination of roads, (2) canisters that fall on the ground, burn and emit smoke for smoke screens – or eject wedges saturated with WP that fall to the ground in an elliptical pattern and eject smoke, and (3) burster rounds, either with point detonating fuse or a time fuse, set to burst at a given height above the ground – these burn with intense heat and emit dense white smoke.¹⁷ WP weapons can be in the form of aerial-delivered bombs, artillery shells, and grenades. WP ignites spontaneously in air at 44 degrees Centigrade (111.2 degrees Fahrenheit) and produce flames of 800 degrees Centigrade, up to 816 degrees Centigrade when it is in contact with oxygen (1,501 degrees Fahrenheit).¹⁸ In Operation Cast Lead, the Israeli military mostly used 155

¹⁵ Reyhani, “The Legality of the Use of White Phosphorus”; Tessier, “Shake & Bake”. 16.

¹⁶ Al Barqouni et al., “Case Report: White Phosphorus Burn”, 68.

¹⁷ MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 76-77.

¹⁸ Atiyeh et al., “Military and Civilian Burn Injuries during Armed Conflicts”; Human Rights Watch, *Rain of Fire*, 3.

millimetre artillery shells, which air-bursts and spreads 116 wedges totalling 5.78 kilos of WP in a radius up to 125 meters.¹⁹

For the purpose of this dissertation, I concentrate on five main modes of application of WP weapons. These modes of applications share two important characteristics, namely that the munitions *burst* and that they have at least the potential to cover wider areas with WP fragments:

1. *Use of bursting WP for creation of a smoke screen/as an obscurant.* WP is considered ideal for this purpose, as it almost instantaneously produces a dense white smoke that can obscure military movements.²⁰ In this category I also include the use of WP for protection against infra-red tracking systems.²¹ The obscurant function of WP is possibly the most common.²² General Peter Pace, as chairman of the US Joint Chiefs of Staff, has said the obscurant function of WP was one of two main functions, the other being to mark a target.²³
2. *Use of WP burster rounds for illumination.* WP can be used to illuminate a battlefield at night.²⁴ Illumination can be achieved in two ways: First, WP flares can be attached to parachutes and, second, rounds can be designed to burst in the air and eject scatter burning WP.²⁵ I will not discuss the former category in this dissertation because it is technically quite remote from the other applications that I discuss. The optimal air-burst altitude for the burster rounds for illumination is 500 meters above ground, which should be high enough for there to be little danger of burning fragments hitting individuals on the ground.²⁶
3. *Use of WP for marking a target.* This function may include marking for assisting in range-finding and/or in preparing subsequent strikes from the air or the ground.²⁷
4. *Use of WP for “flushing out” combatants.* This refers to the controversial tactic where WP rounds are fired into confined spaces where enemy combatants are taking cover, in order to drive them out and then rendering them *hors de combat* with other weapons. The tactic was applied by the US military in Fallujah in

¹⁹ Human Rights Watch, *Rain of Fire*, 3, 11.

²⁰ MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 76.

²¹ Human Rights Watch, *Rain of Fire*, 2.

²² Reyhani, “The Legality of the Use of White Phosphorus”, 17.

²³ “U.S. Defends Use of White Phosphorus Munitions in Iraq”, *The American Journal of International Law*, Vol. 100, No. 2 (April 2006): 487.

²⁴ MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 76.

²⁵ MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 76-77.

²⁶ MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 77.

²⁷ MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 76; “U.S. Defends Use of White Phosphorus Munitions in Iraq”, 487.

2004, but also in World War II and in the Falklands war.²⁸ The tactic is often referred to as “shake and bake”, owing to the jargon of US military personnel who have described their use of WP in Fallujah.²⁹

5. *Use of WP for incendiary purposes, i.e. setting fire to persons or objects.*³⁰

Image 1³¹



White phosphorus artillery is air-burst over Gaza during Operation Cast Lead. Each shell contains 116 felt wedges which can fall over an area up to 250 meters in diameter. © 2009 Getty Images

²⁸ Tessier, “Shake & Bake”, 347-348.

²⁹ Reyhani, “The Legality of the Use of White Phosphorus”, 10; Gary D. Solis, *The Law of Armed Conflict: International Law in War* (Cambridge: Cambridge University Press 2010), 598.

³⁰ MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 76; Gary D. Solis, *The Law of Armed Conflict: International Law in War*, (Cambridge: Cambridge University Press 2010), 598. Solis writes that the primary uses of white phosphorus is to produce a smoke screen, provide illumination, and for incendiary purposes.

³¹ Human Rights Watch, *Rain of Fire*, 23.

2.2 Effects of White Phosphorus on Humans

When in contact with human skin, WP causes both chemical and thermal burns.³² While the thermal burns are caused by the generated heat, the chemical burns result from several different compounds that are produced through chemical reactions. This includes the production of phosphorus pentoxide, which can react with the water in skin and produce corrosive phosphoric acids.³³ There is no doubt that WP burns on human tissue can cause serious damage to internal organs, possibly death.³⁴ WP chemical burns can cause damage deep into underlying tissues, resulting in delayed healing.³⁵ In the case of burn wounds, WP can be absorbed systemically in the body, leading to multiple organ dysfunction syndrome, because of the effect it has on erythrocytes, kidneys, liver, and heart.³⁶ WP burns are associated with significant morbidity, and often necessitate lengthy hospital stays.³⁷

A medical case report from Gaza describes the treatment of a patient with WP burns: An 18-year old man came to be treated in the emergency department after an attack with an incendiary shell. He was diagnosed with WP burns, covering 30 percent of his body. One day after admission to the burns unit, white smoke was noticed emanating from the wounds, and he was transferred to the operating room for removal of WP particles. During the procedure, as WP particle was accidentally dislodged and resulted in a superficial burn on a nurse's neck. The patient was discharged after eight

³² Federation of American Scientists, "White Phosphorus Fact Sheet", accessed on 19 September 2011, <http://www.fas.org/programs/bio/factsheets/whitephosphorusfactsheet.html>; Al Barqouni et al., "Case Report: White Phosphorus Burn", 68; R. Seth, D. Chester, and N. Moiemmen, "A review of chemical burns", *Trauma* 9 (2007): 87.

³³ Federation of American Scientists, "White Phosphorus Fact Sheet".

³⁴ Human Rights Watch, *Rain of Fire*, 3.

³⁵ Al Barqouni et al., "Case Report: White Phosphorus Burn", 68; ICRC: *Weapons that may Cause Unnecessary Suffering or have Indiscriminate Effects: Report on the Work of Experts* (Geneva: ICRC, 1973), 63 (para. 218).

³⁶ Al Barqouni et al., "Case Report: White Phosphorus Burn", 68.

³⁷ Al Barqouni et al., "Case Report: White Phosphorus Burn", 68.

days.³⁸ The risk of re-ignition of WP in wounds is significant, since any remaining WP will re-ignite when re-exposed to oxygen.³⁹

The medical case report included photos of some of the patient's wounds:

Image 2⁴⁰

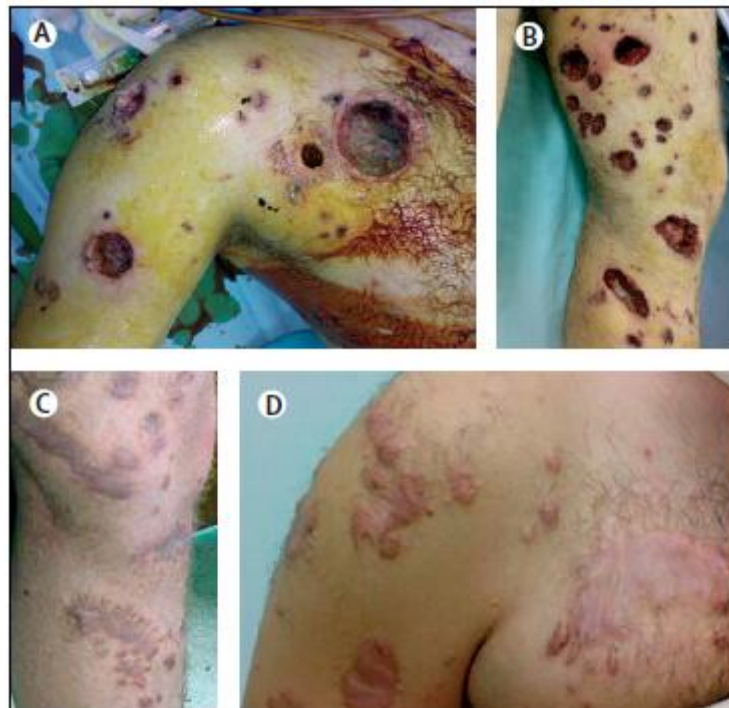


Figure: White phosphorus burn
Many lesions, with severe underlying destruction and necrosis in the right shoulder (A) and left leg (B). After 16 months of follow-up (C, D).

Inhalation of WP smoke is also hazardous to humans: Combustion of WP results in the formation of *phosphorus pentoxide*, which is a severe pulmonary irritant. In a closed space, this may reach concentrations sufficient to cause acute inflammatory changes in the tracheobronchial tree (i.e. the human airways).⁴¹

³⁸ Al Barqouni et al., "Case Report: White Phosphorus Burn", 68.

³⁹ Atiyeh et al., "Military and Civilian Burn Injuries during Armed Conflicts".

⁴⁰ Al Barqouni et al., "Case Report: White phosphorus burn", 68.

⁴¹ Atiyeh et al., "Military and Civilian Burn Injuries during Armed Conflicts".

2.3 A Brief Military History of White Phosphorus

WP was used as a means of warfare in World War I and World War II.⁴² According to one source, there were calls to ban WP already after World War I, because of the painful falling burning fragments.⁴³ It was also used by the Russian Military in Grozny, Chechnya, in 1994.⁴⁴ The military application of WP may be on the increase in the 21st century, seeing how it has featured in many recent conflicts.⁴⁵ Ethiopia was accused by UN arms monitors of using WP against both insurgents and civilians in Somalia in 2007.⁴⁶ According to the Israeli daily Ha'aretz, Israeli officials have admitted use of WP directly against Hezbollah in 2006.⁴⁷

WP seems to be used by a range of states' military forces, and also by non-state actors. Iraqi dissidents have claimed that it was used by the Iraqi government in Nasiriya in March 1994, where Ali Hassan Al Majid (Chemical Ali) used WP and napalm to set fire to civilian houses.⁴⁸ As far as non-state actors are concerned, it is noteworthy that, according to Israeli police, Hamas fired a WP shell in the direction of Sderot in Israel on 14 January 2009.⁴⁹ In Afghanistan, both the foreign troops and the Taleban have made use of WP. Colonel Gregory Julian, spokesman for the commander of U.S. and NATO forces in Afghanistan, has said foreign troops in the country use WP munitions for illumination and as an incendiary to destroy enemy equipment and bunkers.⁵⁰ The US military have accused Taleban for extensive use of WP in attacks against US forces and in civilian areas.⁵¹

The two most discussed events involving use of WP in the past decade is the use by the US military in Fallujah, Iraq, in April and November 2004, and the use of it by the Israeli military in Gaza in 2009. The controversy over the use of WP in Fallujah is the immediate *raison d'être* for some of the articles to which I refer the most in this

⁴² MacLeod and Rogers, "The Use of White Phosphorus and the Law of War", 77.

⁴³ Ian Sample, "What is white phosphorus?", *The Guardian*, 19 November 2005.

⁴⁴ Tessier, "Shake & Bake", 349-350.

⁴⁵ MacLeod and Rogers, "The Use of White Phosphorus and the Law of War", 78.

⁴⁶ MacLeod and Rogers, "The Use of White Phosphorus and the Law of War", 78. Authors cite as source: "US, Ethiopia accused over Somalia", *The Financial Times*, 27 July, 2007.

⁴⁷ MacLeod and Rogers, "The Use of White Phosphorus and the Law of War", 77.

⁴⁸ Tessier, "Shake & Bake", 354.

⁴⁹ Human Rights Watch, *Rain of Fire*, 14. Human Rights Watch questions the claim.

⁵⁰ Paul Tait (ed.), "Key facts about white phosphorus munitions", *Reuters News*, 8 May 2009.

⁵¹ Jason Straziuso, "US military: 44 Afghan cases of white phosphorus", *Associated Press*, 11 May 2009; Michael Evans, "Taleban using British white phosphorus: US papers show banned material was found across Afghanistan", *The Times*, 12 May 2009.

dissertation.⁵² Pentagon spokesman Lt. Col. Barry Venable has described the use of WP in Fallujah in the following manner:

When you have enemy forces that are in covered positions [...] one technique is to fire a white phosphorus round into the position because the combined effects of the fire and smoke—and in some cases the terror brought about by the explosion on the ground—will drive them out of the holes so that you can kill them with high explosives.⁵³

This tactic, which involved the use of WP at least indirectly against enemy combatants with lethal effect, sparked significant international criticism in 2005, after Italian public television showed a documentary that renewed persistent charges concerning US' use of WP rounds.⁵⁴ The US government has dismissed accusations that WP was used illegally.⁵⁵

The use of WP by the Israeli military in Gaza has also been heavily criticised both during and after the event.⁵⁶ Human Rights Watch has accused the Israeli of using WP over populated areas in violation of international humanitarian law.⁵⁷ The report from a UN Human Rights Council probe into the military operation in Gaza – the so-called Goldstone report – also heavily criticised the Israeli use of WP.⁵⁸ The Israeli government has confirmed its use of WP, but denied the accusations that it was systematically used in an illegal manner, stressing its use as an obscurant.⁵⁹

⁵² MacLeod and Rogers, "The Use of White Phosphorus and the Law of War", 76. Tessier, "Shake & Bake", 324-325. Reyhani, "The Legality of the Use of White Phosphorus", 3.

⁵³ Tessier, "Shake & Bake", 324. Tessier's source is "U.S. Forces Used 'Chemical Weapon' in Iraq", *The Independent*, 16 November, 2005.

⁵⁴ Scott Shane, "Defense of Phosphorus Use Turns Into Damage Control", *The New York Times*, 21 November 2005. See also Tessier, "Shake & Bake", 340.

⁵⁵ See f. ex. "U.S. Defends Use of White Phosphorus Munitions in Iraq", *The American Journal of International Law*, Vol. 100, No. 2 (April 2006), 487.

⁵⁶ On the media coverage during the military operation, see Sheera Frenkel, "Israel backs down over white phosphorus", *The Times*, 23 April 2009.

⁵⁷ Human Rights Watch, *Rain of Fire*, 1.

⁵⁸ Goldstone et al., *Human Rights in Palestine and Other Occupied Arab Territories*, 21 (para 48).

⁵⁹ James Hider and Sheera Frenkel: "Israel admits using white phosphorus in attacks on Gaza", *The Times*, 24 January 2009, http://www.timesonline.co.uk/tol/news/world/middle_east/article5575070.ece (Accessed 05.08.2011).

3 White Phosphorus and the Chemical Weapons Convention

The following discussion will be divided into two parts: First, I discuss whether WP weapons fall in the category of “toxic weapons” as defined in the Chemical Weapons Convention, and whether and to what extent the common uses of WP weapons are regulated by this convention. Second, I discuss whether WP weapons fall in the category of “Riot Control Agents”, as defined in the Chemical Weapons Convention, and whether and to what extent the uses of WP weapons are regulated as such.

3.1 Is White Phosphorus a Toxic Chemical?

The Chemical Weapons Convention (short for the *Convention on the prohibition of the development, production, stockpiling and use of chemical weapons and on their destruction*, 1993) prohibits the use of chemical weapons in all circumstances. The ban is total, including not only the use of such weapons, but acquirement, stockpiling and transferral.⁶⁰ The definition of a “chemical weapon” is found in Article II(1)(a) through (c), but only Article II(1)(a) is relevant to the discussion of WP. The definitions in article II(1)(b) and (c) state that for the toxic chemical to fall under the definition of a chemical weapon, it must be “specifically designed” to cause harm or death as a result of the chemical component. One would be hard pressed to say that WP weapons are specifically designed to such purposes, and it thus falls outside the definition in (b) and (c).⁶¹

Article II(1)(a), however, defines a chemical weapon as: “Toxic chemicals and their precursors, except where intended for purposes not prohibited under this Convention, as long as the types and quantities are consistent with such purposes”.⁶² The *application* of the chemical is important: The definition in Article II(1)(a) excludes

⁶⁰ Chemical Weapons Convention, Article I (1)(a) through (b).

⁶¹ The same conclusion is reached by MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 87.

⁶² Chemical Weapons Convention, Article II (1)(a).

toxic chemicals that are applied in a manner not prohibited under the Chemical Weapons Convention. What is meant in this regard is the *potential* use of the weapon, not its purpose of *design*.⁶³

“Toxic chemical” is defined in Article II(2):

Any chemical which through its chemical action on life processes can cause death, temporary incapacitation or permanent harm to humans or animals. This includes all such chemicals, regardless of their origin or of their method of production, and regardless of whether they are produced in facilities, in munitions or elsewhere.

A “precursor” of a toxic chemical is defined in Article II(3): “Any chemical reactant which takes part at any stage in the production by whatever method of a toxic chemical.”

WP is not mentioned in the annex to the Chemical Weapons Convention, where some of the chemicals prohibited are listed. The annex is not exhaustive, however, and only includes those chemicals that have been identified for the application of verification measures in the Convention.⁶⁴

There is no disagreement that WP has toxic properties when it causes chemical burns on human skin. Tessier concludes that it is “well established” that WP causes chemical burns that may cause system toxicity or death if not treated.⁶⁵ MacLeod and Rogers reach the same conclusion.⁶⁶ In their line of argumentation, they cite the NATO Handbook on emergency war surgery, which states that WP burns result in a “vastly increased mortality rate” among animal models, compared to non-phosphorus burns.⁶⁷ Moreover, studies on individuals accidentally burned by WP have shown that dermal

⁶³ MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 87.

⁶⁴ Chemical Weapons Convention, Article II(2) and (3).

⁶⁵ Tessier, “Shake & Bake”, 352.

⁶⁶ MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 90.

⁶⁷ MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 89-90. Their source: *NATO Handbook, Emergency War Surgery*, Part I, chapter II, (Washington, D.C.: US Govt. Printing Office, February 1988).

exposure can result in kidney and liver abnormalities.⁶⁸ Solis, although arguing that WP weapons are not chemical weapons, also concludes that WP has toxic properties.⁶⁹

This conclusion is no doubt in line with medical expertise on the subject. In a case report in *The Lancet*, Loai Nabil Al Barqouni et al. wrote the following:

Because white phosphorus has high lipid solubility, the injuries often extend deep into underlying tissues with resultant delayed wound healing. White phosphorus can also be absorbed systemically resulting in multiple organ dysfunction syndrome because of its effect on erythrocytes, kidneys, liver, and heart.⁷⁰

If indeed the systemic absorption of WP results in multiple organ dysfunction syndrome, there can be no doubt that it should be seen as toxic chemical as defined in the Chemical Weapons Convention. This definition includes chemicals that cause “permanent harm to humans or animals” through its chemical action on life processes.⁷¹ The same conclusion is reached by B.S. Atiyeh et al., who from the perspective of the medical profession, concludes that WP must be classified as a toxic chemical.⁷² Finally, the US Environmental Protection Agency labels WP as “extremely toxic to humans”.⁷³

WP could also be seen as a precursor of a chemical weapon, if the gas that is formed by its reaction with oxygen can be labelled as toxic. This gas, “phosphorus pentoxide”, is widely considered to be toxic. MacLeod and Rogers argue that the gas is “toxic” – because continued exposure leads to the a number of injuries that are related to the inherent toxicity of the chemical – but also states that the greatest danger from WP is not the inhalation of smoke, but being struck by burning fragments.⁷⁴ Reyhani also argues that the gas is toxic.⁷⁵ B.S. Altiyeh et al. (from the perspective of the medical

⁶⁸ MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 89-90. Their source: *NATO Handbook, Emergency War Surgery*, Part I, chapter II.

⁶⁹ Solis, *The Law of Armed Conflict*, 599.

⁷⁰ Al Barqouni et al., “Case Report: White phosphorus burn”, 68.

⁷¹ Chemical Weapons Convention, Article II(2).

⁷² Atiyeh et al., “Military and Civilian Burn Injuries during Armed Conflicts”.

⁷³ U.S. Environmental Protection Agency, “Phosphorus”, January 2000, accessed on 10 August 2011, <http://www.epa.gov/ttn/atw/hlthef/whitepho.html>

⁷⁴ MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 77, 90.

⁷⁵ Reyhani, “The Legality of the Use of White Phosphorus”, 31-32.

profession) describes it as “[...] a severe pulmonary irritant, which in a closed space may reach concentrations sufficient to cause acute inflammatory changes in the tracheobronchial tree.”⁷⁶ Tessier concludes that phosphorus pentoxide is toxic.⁷⁷

The definition in Article II(2) is very wide: The category “toxic chemical” includes any chemical that *can* cause death, temporary incapacitation or permanent harm to humans or animals through its chemical action on life processes. A study by the U.S. Army Center for Health Promotion and Preventive Medicine states that continued exposure to the vapours of WP “can lead to bronchitis, persistent coughing, severe burns, weakness, anemia, loss of appetite, and possibly pneumonia”.⁷⁸ There is no mention in Chemical Weapons Convention Article II(2) of how long the exposure to the chemical would have to be, in order for the relevant effects to occur. For this reason, it seems that the definition in this article is wide enough to cover WP smoke.

The conclusion is that there seems to be no doubt that WP should be classified as a “toxic chemical”, in as much as the chemical burns it causes upon contact with human skin results in toxicity. It seems equally clear that the chemical by-product of WP, “phosphorus pentoxide”, has toxic properties. The definition of “toxic chemical” in Chemical Weapons Convention Article II(2) is wide and covers WP smoke as well as WP.

3.2 Do the Toxic Properties of White Phosphorus Mean that it is Prohibited as a Chemical Weapon?

Despite the consensus regarding classification of WP as a toxic chemical, there is disagreement among legal experts whether WP is a chemical weapon. The disagreement centres on the interpretation of Convention’s Article II(9)(c). This article excludes from the “chemical weapons” category, as defined in Article II(1)(a) those chemicals whose

⁷⁶ Atiyeh et al., “Military and Civilian Burn Injuries during Armed Conflicts”.

⁷⁷ Tessier, “Shake & Bake”, 348.

⁷⁸ U.S. Army Center for Health Promotion and Preventive Medicine: “Detailed Facts About White Phosphorus”, accessed on 30 June 2011, <http://www.whale.to/b/whitephosphorus.pdf> (not paged). The study is also referred to in MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 90.

“military purposes are not connected with the use of chemical weapons and not dependent on the use of the toxic properties of chemicals as a method of warfare.”⁷⁹

The question is thus whether the military purposes of WP weapons are connected with, or dependent on, the use of the toxic properties of chemicals as a method of warfare.

MacLeod and Rogers conclude that WP, although *de jure* a chemical weapon as defined in the Chemical Weapons Convention, is not prohibited in its most common applications: providing illumination and producing smoke screens. Even the “flushing out” application of WP is permitted under the Chemical Weapons Convention, they argue, because this tactic was not dependent on the toxic properties of WP.⁸⁰ Solis takes the same view, concluding that Chemical Weapons Convention Article II(9)(c) implies that the primary uses of WP are not illegal, including the production of a smoke screen, providing illumination, and use for incendiary purposes.⁸¹ He also argues that the use of WP in Fallujah was also not illegal under the Chemical Weapons Convention, because WP was used for incendiary purposes, not chemical or toxic.⁸²

Reyhani, on the other hand, argues that the application of WP to “flush out” enemy combatants was illegal.⁸³ Contrary to Solis’ conclusion, both Reyhani and Tessier claim that the use of WP in Fallujah was indeed dependent on the toxic properties of WP.⁸⁴

Peter Kaiser, spokesman for the OPCW (Organization for the Prohibition of Chemical Weapons, the international body responsible for implementation of the Chemical Weapons Convention), made a statement on the legal status of WP in 2004, following the debate about WP application in Fallujah:

[WP] is not forbidden by the CWC if it is used within the context of a military application which does not tend to require or does not intend to use the toxic properties

⁷⁹ Chemical Weapons Convention, Article II(9)(c).

⁸⁰ MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 90-91.

⁸¹ Solis, *The Law of Armed Conflict*, 598.

⁸² Solis, *The Law of Armed Conflict*, 598-599. A similar point is made in MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 90-91.

⁸³ Reyhani, “The Legality of the Use of White Phosphorus”, 32.

⁸⁴ Reyhani, “The Legality of the Use of White Phosphorus”, 32; Tessier, “Shake & Bake”, 357.

of white phosphorus. White phosphorus is normally used to produce smoke, to camouflage movement.

If that is the purpose for which the white phosphorus is used, then that is considered under the Convention legitimate use. If on the other hand, the toxic properties of white phosphorus, the caustic properties, are specifically intended to be used as a weapon, that of course is prohibited, because the way the Convention is structured or the way it is in fact applied, any chemicals used against humans or animals that cause harm or death through the toxic properties of the chemical are considered chemical weapons.⁸⁵

There seems to be the consensus opinion that the application of WP weapons is what determines the legality. I have concluded that both the WP smoke, and WP in itself (through dermal exposure), are toxic chemicals, as defined in Chemical Weapons Convention Article II(2). Following this, the application of WP weapons, when depending on these toxic properties as a method of warfare, would be illegal according to the Chemical Weapons Convention. The regular applications of WP weapons, providing smoke screen and illumination, are clearly not dependent on the toxicity of WP, and are thus not illegal under Chemical Weapons Convention. Nor is it illegal to use WP to set fire to, or mark, an object that is a military target.

The legality of using WP directly against enemy combatants is less clear, however. As mentioned above, Reyhani and Tessier argue that the use of WP in Fallujah was dependent on the toxic properties of WP, whereas Solis and MacLeod and Rogers disagree.⁸⁶ Much of the evidence does seem to point in the direction of the former's conclusion, particularly statements from military personnel involved in the events under discussion. Pentagon spokesman Lt. Col. Barry Venable, for example, said that the "flushing out" tactic depended on the "combined effects of the fire and

⁸⁵ Paul Reynolds, "White Phosphorus: Weapon on the Edge", *BBC News*, 16 November 2005, accessed on 17 August 2011, <http://news.bbc.co.uk/2/hi/americas/4442988.stm>

⁸⁶ Reyhani, "The Legality of the Use of White Phosphorus", 32; Tessier, "Shake & Bake", 357; Solis, *The Law of Armed Conflict*, 598-599; MacLeod and Rogers, "The Use of White Phosphorus and the Law of War", 90-91.

smoke”.⁸⁷ He did not say, of course, that the smoke had to be toxic. Still, if the smoke in fact *is* toxic, it is certainly a case of using toxic smoke as a weapon against personnel.

One could interject that, in fact, *all* smoke is toxic, if only the concentration is of a sufficient degree. Still, we do not generally consider, say, burning wood to be a chemical weapon even though the resulting smoke can be lethal. Technically, however, the source of the toxic gas is not relevant. If a weapon is designed to poison combatants with carbon monoxide – a toxic by-product of burning wood – it would certainly have to be considered a chemical weapon under the convention, regardless of the fact that human exposure to this gas is very common.

Toxicity is in the definition in Article II(2) contingent on the possible effects of death, temporary incapacitation or permanent harm. It is not definitively proven that the use of WP in Fallujah was intended to bring about these effects as a *direct* result of WP. Furthermore, the toxicity of WP smoke does not seem to have been a necessary component for the “flushing out” tactic to be successful. This would depend on a wide definition of “temporary incapacitation”, which is not further defined in Chemical Weapons Convention. The term “incapacitating agent” is defined in *The Oxford Essential Dictionary of the U.S. Military*: “An agent that produces temporary physiological or mental effects, or both, that will render individuals incapable of concerted effort in the performance of their assigned duties.”⁸⁸ By this definition, one could certainly say that the use of WP in Fallujah was dependent on its effect of “temporary incapacitation”. WP was successful in “flushing out” enemy combatants precisely because it rendered individuals incapable of concerted effort in the performance of their duties (i.e. to hold a certain position for combat purposes).

The conclusion is that WP weapons falls outside the boundaries set for illegal chemical weapons in Chemical Weapons Convention in its most common applications, due to the specific requirements in Article II(9)(c). WP used for providing illumination or a smoke screen, or for marking a target or setting fire to an object, is not illegal under the Chemical Weapons Convention. If WP is used in a manner dependent on its toxicity, however, it would be illegal according to the Chemical Weapons Convention. The use

⁸⁷ Tessier, “Shake & Bake”, 324. Tessier’s source is “U.S. Forces Used ‘Chemical Weapon’ in Iraq”, *The Independent*, 16 November, 2005.

⁸⁸ *The Oxford Essential Dictionary of the U.S. Military* (New York: Oxford University Press, 2001).

of WP for “flushing out” enemy combatants was dependent on WP toxic properties, and therefore not permitted under the Chemical Weapons Convention.

3.3 Are White Phosphorus Weapons Prohibited by the Chemical Weapons Convention as Riot Control Agents?

Some have argued that certain applications of WP entail that it is used as a “Riot Control Agent” (RCA). Such agents are also regulated in Chemical Weapons Convention. Concretely, Article I(5) states that: “Each State Party undertakes not to use riot control agents as a method of warfare”.⁸⁹ The term “Riot Control Agent” is defined in Chemical Weapons Convention Article II(7): “Any chemical not listed in a Schedule, which can produce rapidly in humans sensory irritation or disabling physical effects which disappear within a short time following termination of exposure.” It is not in dispute that short-time exposure to WP smoke has short-term and temporary sensory irritation as an effect. For this reason, it is difficult not to agree with Reyhani, who claims that WP has RCA properties.⁹⁰

It may seem superfluous to discuss whether WP is regulated as an RCA in the Chemical Weapons Convention after concluding above that WP classifies as a toxic chemical. It is difficult to think of an application of WP which would be restricted because of WP’s RCA properties, but not its toxic properties. It has been made clear above, however, that there is disagreement among legal experts and among states about whether e.g. using WP for “flushing out” combatants is prohibited under the Chemical Weapons Convention. It might be the case that restrictions of the use of WP because of its RCA properties could be more easily agreed upon than those stemming from its toxic properties. For example, if one takes the position that the “flushing out” tactic of Fallujah depended on WP smoke causing “sensory irritation”, rather than “temporary incapacitation”, then regulations stemming from WP’s RCA properties would apply, but not those from its toxic properties.

⁸⁹ Chemical Weapons Convention, Article I(5).

⁹⁰ Reyhani, “The Legality of the Use of White Phosphorus”, 56.

The difference between RCA and toxic chemicals in regard to the rules of the Chemical Weapons Convention is a topic of debate. The United States position is that RCA is a separate category from toxic chemicals (thus not a “chemical weapon”). The argumentation is that Chemical Weapons Convention Article I(5) – which prohibits RCA as a method of warfare – is superfluous if RCA is regulated in the same way as chemical weapons. The United States government has argued that Article I (5) was included as a compromise in the negotiations, and agreed by the United States in exchange for leaving RCA outside the definition of chemical weapons.⁹¹ This is the divergent view, however, as most states and legal experts seem to agree that RCA falls within the definition of toxic chemicals and is therefore subjected to the same set of restrictions and regulations as lethal chemical weapons.⁹² Gro Nystuen has argued that the wording of the convention is the most important – in line with the Vienna Convention on the Law of Treaties (1969) Article 31 – and that the wording does not exclude RCA from chemical weapons definition, but on the contrary indicates that RCA is a subcategory.⁹³

I agree with Nystuen on this point. Particularly revealing, in my opinion, is article II(9), which defines the term “purposes not prohibited under this convention” as “law enforcement including domestic riot control purposes” (one of alternative definitions).⁹⁴ Although the term “purposes not prohibited under this convention” is used 14 times in the Chemical Weapons Convention, it is not used directly in conjunction with the prohibition or definition of RCA (i.e. Articles I(5) and II(7)). The definition in Article II(9)(d) must therefore refer to the definition of a “chemical weapon” in Article II(1)(a), which deals with “toxic chemicals and their precursors”.

For a certain application of WP to be considered illegal under the regulations for RCA, it must also be used as a “method of warfare”. “Method of warfare” is not defined in the Chemical Weapons Convention. According to Ernest Harper, this was intentional,

⁹¹ Gro Nystuen, *Non-lethal weapons and international humanitarian law*, FFI/RAPPORT-2008/01983 (Kjeller, Norway: Norwegian Defence Research Establishment, 2008), 30. Reyhani describes this compromise in Reyhani, “The Legality of the Use of White Phosphorus”, 39-40.

⁹² Nystuen, *Non-lethal weapons and international humanitarian law*, 29.

⁹³ Nystuen, *Non-lethal weapons and international humanitarian law*, 30; The Vienna Convention on the Law of Treaties (1969), Article 31.

⁹⁴ Chemical Weapons Convention, Article II(9)(d).

and the result of the need to find a compromise between polarized parties in the negotiations over the Chemical Weapons Convention text.⁹⁵ Harper concludes that the term should be defined in the following manner: “Riot Control Agents are a method of warfare when used to systematically enable or multiply the use of lethal force against hostile enemies.”⁹⁶ If an RCA is used in order to avoid the use of lethal force and save lives, however, it should not be regarded as being used as a “method of warfare”.⁹⁷ This is also the US position on the subject.⁹⁸ Reyhani arrives at a similar conclusion, arguing that if an RCA is used to flush out combatants in order to kill them, then this must certainly be regarded as a “method of warfare”.⁹⁹

The lack of a definition of “method of warfare” makes it difficult to arrive at a strong conclusion in regard to the permissibility of using WP when considering that its smoke has RCA properties. For this reason, it is tempting to agree with Harper that the key issue should be whether RCAs are applied as force multipliers. However, since the text of the Chemical Weapons Convention is unclear on this point, one should not venture too far in narrowing the meaning of the term “method of warfare”, particularly if Harper is right in stating that the term was intentionally left undefined. Furthermore, it is certainly debatable whether “method of warfare” can be generally contingent on lethality. Hypothetically, RCAs could be used as a non-lethal means to force the civilian population out of an area as part of a campaign of ethnic cleansing. Certainly, such a tactic should be regarded as a “method of warfare”.

In any case, it is not necessary to provide a specific definition of “method of warfare” that would be applicable in all circumstances for the purposes of this dissertation. As far as WP weapons are concerned, it should suffice to conclude that there does not seem to be disagreement among legal experts that using RCA as a lethal force multiplier would fall into the category of “method of warfare”. Therefore it seems

⁹⁵ Ernest Harper, “A Call for a Definition of Method of Warfare in Relation to the Chemical Weapons Convention”, *Naval Law Review* 48 (2001): 133.

⁹⁶ Harper, “A Call for a Definition of Method of Warfare in Relation to the Chemical Weapons Convention”, 158.

⁹⁷ Harper, “A Call for a Definition of Method of Warfare in Relation to the Chemical Weapons Convention”, 158.

⁹⁸ Reyhani, “The Legality of the Use of White Phosphorus”, 45.

⁹⁹ Reyhani, “The Legality of the Use of White Phosphorus”, 58.

fairly safe to conclude that the use of WP in this manner would be prohibited under the Chemical Weapons Convention. This prohibition is most clearly relevant to the “flushing out” tactics discussed. Employment of such tactics is prohibited under the Chemical Weapons Convention.¹⁰⁰

¹⁰⁰ This conclusion does not necessarily mean that the use of white phosphorus in Fallujah was illegal. Due to the scope of this text, I will not in these pages discuss the important issue of whether the fighting in Fallujah took place in a context of “law enforcement” or not, which has relevance for the rule in Article II(9)(d). Reyhani discusses this, and concludes that the use of white phosphorus in Fallujah should not be considered part of “law enforcement”, see Reyhani, “The Legality of the Use of White Phosphorus”, 64; The issue is also raised in Haines, “Weapons, means and methods of warfare”, 280. I find it interesting that none of these articles discuss how human rights law, and particularly the right to life, will apply in cases where international humanitarian law will not. This issue warrants further discussion, in my opinion, although it falls outside the scope of this dissertation.

4 White Phosphorus and the Convention on Certain Conventional Weapons

To what extent are WP weapons regulated in the Convention on Certain Conventional Weapons of 1980 (*Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May be Deemed to be Excessively Injurious or to Have Indiscriminate Effects*)? In this chapter, I will first discuss whether WP weapons fall into the category of “incendiary weapons” as defined in the Convention on Certain Conventional Weapons, then discuss whether and to what extent the common uses of WP weapons are regulated by this convention.

4.1 Are White Phosphorus Weapons Incendiary Weapons as Defined in the Convention on Certain Conventional Weapons?

Protocol III of the Convention on Certain Conventional Weapons (*Protocol on Prohibitions or Restrictions on the Use of Incendiary Weapons*) deals with incendiary weapons. There is no doubt that WP weapons have the capability to set fire to persons and objects, and is therefore an incendiary in the common use of this term. Protocol III, however, sets the threshold for an incendiary somewhat higher. For this reason, the US military has argued – in defence of allegations of the use of WP in Fallujah – that the WP weapons indeed *are* incendiary, but not as defined under the Convention on Certain Conventional Weapons.¹⁰¹ Protocol III defined an “incendiary weapon” as “any weapon or munition which is *primarily designed* to set fire to objects or to cause burn injury to persons through the action of flame, heat, or combination thereof, produced by a chemical reaction of a substance delivered on the target [my italics].”¹⁰² The crucial words are “primarily designed”, which seem to require that for a weapon to be covered by the definition it is not sufficient that it has the potential to be incendiary, but that this

¹⁰¹ A statement was made to this effect by General Peter Pace, chairman of the Joint Chiefs of Staff, referred in “U.S. Defends Use of White Phosphorus Munitions in Iraq”, 487.

¹⁰² Convention on Certain Conventional Weapons Protocol III, Article 1(1).

potential must be the primary function of the weapon. This relates to the purpose of design of the weapon in question, not its actual military application.

In the case of WP weapons, this would mean that if the weapon is designed to create a smoke screen, but can in fact also be used for incendiary purposes, it would fall outside the definition. Indeed, the protocol specifically excludes from the “incendiary weapons” category munitions with “incidental incendiary effects”, such as illuminants, tracers, smoke or signalling systems.¹⁰³ However, if the primarily designed purpose of a specific WP weapon is incendiary, it will fall under the definition in Protocol III.¹⁰⁴

There is disagreement about how Protocol III applies to specific WP weapons. Peter Herby, head of the Arms Unit at the International Committee of the Red Cross (ICRC), is reported to have said that Protocol III does apply to WP weapons as they were used in Operation Cast Lead.¹⁰⁵ Of course, a statement to a newspaper is not necessarily the result of a thorough legal analysis, but the source of the quote makes it significant. For this reason, it is referred to by Human Rights Watch in its report on Operation Cast Lead in Gaza, in which it accepts the position that Protocol III covers WP weapons in this regard.¹⁰⁶

Reyhani argues that the WP weapons that were used in Fallujah fall under the definition in Protocol III.¹⁰⁷ He argues further that the US would have been in breach of Protocol III, Article 2(3) if it had ratified the protocol, because WP weapons were delivered from the ground without knowledge of who it would be hitting.¹⁰⁸ In contrast,

¹⁰³ Convention on Certain Conventional Weapons Protocol III, Article 1(1)(b)(i).

¹⁰⁴ This is also the conclusion of MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 94.

¹⁰⁵ Ilene R. Prusher, “After the War, Gazans Seek Answers on White Phosphorus,” Christian Science Monitor, 5 February 2009.

¹⁰⁶ Human Rights Watch, *Rain of Fire*, 58-59, 63. Human Rights Watch does not discuss the point at length, but focuses instead on customary international law. As its report deals with Gaza, it is significant that Israel has not ratified Protocol III, even though it is party to the Convention on Certain Conventional Weapons.

¹⁰⁷ Reyhani, “The Legality of the Use of White Phosphorus”, 88-89.

¹⁰⁸ MacLeod and Rogers criticise Reyhani on this point, arguing that Protocol III does not prohibit use of incendiary weapons against combatants, meaning that his conclusion regarding the use of WP weapons in Fallujah is not relevant. MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 93.

Solis argues that WP was used as an incendiary in Fallujah, but that this use against combatants would not have been prohibited under the Convention on Certain Conventional Weapons Protocol III, even if the US had ratified it at the time.¹⁰⁹ Similarly, MacLeod and Rogers also conclude that the use of WP weapons in Fallujah was not illegal under Protocol III.¹¹⁰

The disagreements described above may stem from the lack of full clarity of the definitions in Protocol III. The protocol is clear in that its definition of incendiary weapons cover only this primarily designed to have this function, and does not cover incidental incendiary effects. A problem that is unsolved in the text, however, is that most WP weapons will have incendiary effects that might not be considered explicitly as a primary function, but still can be important effects in practice. For example, a WP mortar can be designed for creating a smoke screen, but can also be used for “flushing out” combatants through its combined incendiary and smoke generating effects. In this case, the incendiary effect would not be the explicitly stated primary function of the weapon, but still one that is generally recognised, and which increases the applicability of the weapon. There is little guidance in Protocol III to tell us whether how to deal with a weapon that has incendiary effects that are neither explicitly primary nor incidental. Furthermore, there is nothing that definitively tells us who has the authority to determine what the primary designed function of the weapon is.

What if the manufacturer of a weapon explicitly states that the designed purpose is to create a smoke screen, but in fact also relies on dual use-functions including incendiary effects of the weapon for its sale? Since the text does not specify exactly who has the authority to decide what the primary designed function of a given weapon is, it seems reasonable that this cannot rest exclusively with the designer or manufacturer of the weapon, but must be decided after taking all relevant aspects into account. If the “real” primary function of a weapon is another than that which is stated, then the “real” function must be regarded as the one which is legally relevant.

This criticism is not entirely accurate, however, as Reyhani’s argument is that the efforts to secure a minimum of civilian injury and damage had been unsatisfactory.

¹⁰⁹ Solis, *The Law of Armed Conflict*, 558-599.

¹¹⁰ MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 92.

This may be clear in principle, but will be difficult in practice. The same mortar type can be used for creating a smoke screen in one context and as an incendiary in another. In this case, it is clear that the creation of a smoke screen is one primary function, but unclear if the incendiary effects should also be regarded as a primary function. The words in protocol III indicate that potential or actual effects of the weapon are not relevant for the definition. The emphasis on “design” in the definition of an incendiary weapon, and the complementary dismissal of “incidental effects”, shows that the convention is not to be understood in that way.

One way to sort this out could be to consider whether the weapon would have been likely to have been as widely distributed had it not been for the incendiary function. It is feasible that militaries will purchase, and distribute to the battlefield, munitions on the basis of their primary functions, and not their incidental ones. If the versatility of a weapon is what makes it attractive – due to its dual-use potential – then all functions that would combine to significantly increase versatility should be regarded as primary. The reason is that if one of these functions would be taken away, the versatility would decrease, and the distribution of the weapon would probably do the same. Therefore, if it is probable that a mortar type would be less widely distributed if it did not have an incendiary effect, then this would be evidence that the incendiary effect should overall be considered to be equivalent to a primary function.

The conclusion is that only WP weapons which are primarily designed to function as incendiaries are clearly covered by Protocol III of the Convention on Certain Conventional Weapons. If it is unclear whether incendiary function of a WP weapons should be regarded as primary or incidental, an overall assessment must be made to determine whether the weapons falls under the definition. A relevant test would be to estimate whether the weapon would be less widely distributed if it did not have an incendiary effect.

4.2 Legality of the Uses of White Phosphorus Weapons under the Convention on Certain Conventional Weapons

Protocol III includes four types of prohibitions on incendiary weapons. First, it prohibits making civilians and civilian objects the object of attack of incendiary weapons.¹¹¹ Second, it places restrictions on air-delivered incendiary weapons, by prohibiting such tactics for use against objects within a concentration of civilians.¹¹² Third, it prohibits the use of incendiary weapons (also ground-delivered) within civilian concentrations unless the military objective is clearly separated and feasible precautions have been made to minimise civilian injury and damage.¹¹³ Finally, Protocol III prohibits the use of incendiary weapons on forests and plant cover.¹¹⁴ Notably, there is nothing in Protocol III that prohibits anti-personnel uses of incendiary weapons against combatants.

What is the significance of the four prohibitions in the Protocol? The first and third prohibitions of Protocol III actually seem quite redundant. There are undisputed rules in customary international humanitarian law that require distinction between military and civilian targets, and that prohibit the targeting of civilians and civilian objects.¹¹⁵ These basic principles, to which I return in the next chapter, apply without question to both incendiary and non-incendiary weapons. The only additional restriction in Protocol III, therefore, is the limitation on air-delivered incendiary weapons on targets within civilian concentration.¹¹⁶

Out of the types of uses of WP weapons described in the introduction, only that which involves the direct use of WP as an incendiary weapon are clearly covered in Protocol III of the Convention on Certain Conventional Weapons. Even this application of WP, however, is not prohibited under the convention if used against combatants or objects that are legitimate military targets. The other modes of application would be covered if it can be reasonably established that the incendiary effect of the WP weapons

¹¹¹ Convention on Certain Conventional Weapons Protocol III, Article 2(1).

¹¹² Convention on Certain Conventional Weapons Protocol III, Article 2(2).

¹¹³ Convention on Certain Conventional Weapons Protocol III, Article 2(3).

¹¹⁴ Convention on Certain Conventional Weapons Protocol III, Article 2(4).

¹¹⁵ The redundancy is also commented upon in Dinstein, *The Conduct of Hostilities under the Law of International Armed Conflict*, 77.

¹¹⁶ Dinstein, *The Conduct of Hostilities under the Law of International Armed Conflict*, 77.

can be said to be a primary effect by design. Even so, the restrictions on use are not severe. “Flushing out” combatants, or using WP weapons for creation of a smoke screen, illumination or marking a target, would only be prohibited if the attack in question involved the use of WP weapons that can be assumed to have an incendiary function as a primary effect by design and if it was used in a context where the risk of injuring or damaging civilian persons or objects would be at unacceptably high.

5 White Phosphorus and Customary International Humanitarian Law

In this chapter, I will first discuss the relevance of selected rules of customary international humanitarian law for WP weapons, and then discuss whether and to what extent the common uses of WP weapons are regulated by customary international humanitarian law.

5.1 White Phosphorus and the Rules of Customary International Humanitarian Law

Which rules of customary international humanitarian law may apply to WP weapons? MacLeod and Rogers list four basic principles that they consider to be relevant: “[1] that weapons must not be of a nature to cause unnecessary suffering or superfluous injury; [2] must not be indiscriminate in their effects; [3] must not be treacherous in nature; and [4] must not be abhorrent to ordinary people.”¹¹⁷ The list appears to contain the main principles that others have also used in similar analyses, and will therefore serve as a starting point for the following discussion.¹¹⁸ The exception is the third principle on the list (*treacherousness*), which I will not discuss further. According to MacLeod and Rogers, this principle is probably the rationale behind the prohibition against poisonous, poison gas, chemical and biological weapons.¹¹⁹ The reason why I disregard this principle here, is that I have chosen to exclude the discussion of international regulation of poisonous and poison gas weapons from this dissertation, and that I have discussed the toxicity of WP in regard to the Chemical Weapons Convention at length.

¹¹⁷ MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 83.

¹¹⁸ The four principles corresponds with the list of principles in Jeffrey S. Morton, “The Legal Status of Laser Weapons That Blind”, *Journal of Peace Research*, Vol. 35, No. 6 (Nov., 1998): 699. The First three principles are also listed in Tessier, “Shake & Bake”, 326-327.

¹¹⁹ MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 85.

5.1.1 The Principle of No Unnecessary Suffering or Superfluous Injury

The first principle on the list, prohibition of weapons that are of a nature to cause unnecessary suffering or superfluous injury, follows from one of the basic rules of customary international humanitarian law, which is listed as Rule 70 in the 2005 ICRC Study: “The use of means and methods of warfare which are of a nature to cause superfluous injury or unnecessary suffering is prohibited”.¹²⁰ MacLeod and Rogers’ principle follows logically from this rule, because if a weapon is *of such a nature* that it causes unnecessary suffering or superfluous injury, *all use* of this weapon would be contrary to that rule.

Rule 70 is actually a two-fold rule: It prohibits weapons that by their nature cause unnecessary suffering and also the use of weapons in such a manner that they are likely to cause unnecessary suffering.¹²¹ Of course, it would still be more difficult to prove that a given weapon type is of such a *nature*, than to argue that a *certain use* of that weapon type is contrary to customary international humanitarian law.

The ICJ has called the principle of no unnecessary suffering or superfluous injury one of the “cardinal principles” of international humanitarian law.¹²² It is codified in Article 35 of Additional Protocol I (1977) of the Geneva conventions (1949), and similar rules are mentioned in the preamble of the St. Petersburg-declaration and in Article 23(d) of the Hague Regulations 1907.¹²³ That the rule has status as customary international law is not in dispute, but the trouble is to determine what exactly constitutes “superfluous injury or unnecessary suffering” – a phrase that will have different meanings to different people.¹²⁴ For example, one may ask if WP weapons really cause more suffering than, say, being hit by a regular rifle bullet. Certainly, the

¹²⁰ Henckaerts and Doswald-Beck, *Customary International Humanitarian Law*, 237.

¹²¹ Haines, “Weapons, means and methods of warfare”, 265.

¹²² International Court of Justice, *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinions, ICJ Reports, 8 July 1996, 257 (para. 78).

¹²³ *Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts* (Protocol I), 8 June 1977, Article 35(2); *Declaration Renouncing the Use, in Time of War, of Explosive Projectiles Under 400 Grammes Weight*, St. Petersburg, 29 November/11 December 1868, preamble; *Convention (IV) respecting the Laws and Customs of War on Land and its annex: Regulations concerning the Laws and Customs of War on Land*, The Hague, 18 October 1907, Article 23(d).

¹²⁴ J. McClelland, “Conventional Weapons: A Cluster of Developments”, *The International and Comparative Law Quarterly*, Vol. 54, No. 3 (July 2005): 756; MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 84.

WP wound would look worse from the outside, but it could be less deadly and the internal damage need not necessarily be worse.

A notable effort to resolve this problem was made through the so-called SIrUS project.¹²⁵ Medical staff of the ICRC put forward a proposal of four tests, of which each would imply unnecessary suffering or superfluous injury. The conditions are that the effects of the weapons must be design-dependent and foreseeable when used against human beings, and cause one of these four effects:

1. Specific disease, specific abnormal physiological state, specific abnormal psychological state, specific and permanent disability or specific disfigurement.
2. Field mortality of more than 25 % or a hospital mortality of more than 5 %.
3. Grade 3 wounds as measured by the Red Cross wound classification (10 cm. or more in skin cavity).
4. Effects for which there is no well recognized and proven treatment.¹²⁶

The document explains further how these criteria apply to weapons that are already prohibited. Significantly, they argue that Criterion 1 and possibly Criteria 2 and 4 apply to chemical weapons.¹²⁷ Furthermore, they argue that these criteria also apply to weapons which are “subject to either a review of the law pertaining to them or widespread stigmatization”, notably that Criterion 2 and possibly Criterion 1 apply to “burning weapons”.¹²⁸

The four tests of the SIrUS project are perhaps the best criteria available at the present time for defining the concept of “unnecessary suffering or superfluous injury”, but they also illustrate how a precise interpretation of the term still seems remote. In most cases, it is not possible to read the four tests as a form of algorithm leading to a clear result in regard to WP weapons, but they can at least serve as guidelines. Specifically, one could argue that criterion 1 would be met by WP weapons, because WP is likely to cause an abnormal physiological state through its chemical reaction with the human body. It is not certain if criterion 2 will also be met, because the mortality

¹²⁵ Robin M. Coupland (ed.), *Towards a Determination of which Weapons cause “Superfluous injury or unnecessary suffering”*, The SIrUS Project (Geneva, International Committee of the Red Cross, 1997). Referred to in McClelland, “Conventional Weapons”, 756; and MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 84-85.

¹²⁶ Coupland, *Towards a Determination of which Weapons cause “Superfluous injury or unnecessary suffering”*, 23.

¹²⁷ Coupland, *Towards a Determination of which Weapons cause “Superfluous injury or unnecessary suffering”*, 26.

¹²⁸ Coupland, *Towards a Determination of which Weapons cause “Superfluous injury or unnecessary suffering”*, 26.

rate from WP burns is uncertain. In the mentioned case report in *The Lancet*, the authors' write that "White phosphorus burns are associated with *significant morbidity* often necessitating lengthy hospital stays. Extreme cases can be fatal [my italics]", but also note that WP burns "are rarely encountered in practice and literature describing cases is limited."¹²⁹ Criterion 3 is likely to be met when WP weapons are used directly against individuals. Criterion 4 will not be met.¹³⁰ In sum, the approach provided by these tests strengthens the case for arguing that the principle of no unnecessary suffering or superfluous injury may apply at least to certain applications of WP weapons.

State practice is also relevant. *The UK Manual of the Law of Armed Conflict* (2004) advises against using WP directly against personnel, stating that the principle of no unnecessary suffering or superfluous injury "[...] applies to white phosphorus, which is designed to set fire to targets such as fuel and ammunition dumps or for use to create smoke, and which should not be used directly against personnel".¹³¹

There is also another rule of customary international humanitarian law that should be considered in this context, namely Rule 85 in the 2005 ICRC Study: "The anti-personnel use of incendiary weapons is prohibited, unless it is not feasible to use a less harmful weapon to render a person *hors de combat*."¹³² This rule is based on the more general Rule 70.¹³³ Rule 85 does not specify that the incendiary effect must be "primary", as is the case with Convention on Certain Conventional Weapons, Protocol III. There is therefore no disagreement that WP weapons are considered incendiary as far as Rule 85 is concerned. The rule shows that there is no general prohibition on the use of WP weapons on combatants due to its incendiary properties, but with the restriction that other and less harmful weapons must be applied instead, if they can fulfil the same military purpose.¹³⁴ It is worth noting that rule 85 is less restrictive than the position found in the *The UK Manual of the Law of Armed Conflict*, because the British

¹²⁹ Al Barqouni et al, "Case Report: White phosphorus burn", 68.

¹³⁰ A treatment is described in Seth et al., "A review of chemical burns", 87.

¹³¹ *The UK Manual of the Law of Armed Conflict* (London: UK Ministry of Defense, 2004), 112.

¹³² Henckaerts and Doswald-Beck, *Customary International Humanitarian Law, Volume I: Rules*, 289.

¹³³ MacLeod and Rogers, "The Use of White Phosphorus and the Law of War", 95. Reyhani, "The Legality of the Use of White Phosphorus", 85-86.

¹³⁴ See also Solis, *The Law of Armed Conflict*, 599.

position is that WP should not be used, whereas the Rule 85 states that it may be used if necessary.¹³⁵

It is not clear if Rule 85 implies that there are more severe restrictions on incendiary weapons than on other weapons, by customary international law. William Boothby has rightly pointed out that combatants are obligated by the principle of no unnecessary suffering or superfluous injury to use a less harmful weapon in all cases, if the military effect would be the same.¹³⁶ It is even imaginable that, in some cases, an incendiary weapon could be less harmful than other alternatives. On these grounds, one may certainly question the value-added of Rule 85 in relation to the more general principle. However, there is no doubt about the fact that the general principle also covers incendiary weapons.

The question of whether there are alternatives to WP with which one may achieve the same military effects is critical. It is difficult, of course, to provide a definitive answer to this, because alternative munitions have other characteristics – e.g. they might require more time to create a usable smoke screen – that may or may not be seen as decisive disadvantages. However, there are many who have argued that viable alternatives do exist. In regard to the use of WP weapons in Operation Cast Lead, Human Rights Watch has argued that alternatives were available in the form of 155 mm smoke projectiles, which it claims are more easily deployed over a wider area, cause no damage to civilians, and are manufactured by the Israeli Military Industries (IMI).¹³⁷ The Goldstone report has also concluded that alternatives do exist and which are free from the hazards of WP.¹³⁸

Nothing of the above suggests that WP weapons as such should be considered illegal as such. There are, however, clearly binding restrictions on the use of WP weapons. Applications of such weapons in a manner that cause unnecessary suffering or superfluous injury for human beings, including combatants, are prohibited. This would most clearly be relevant if WP weapons are used directly against combatants.

¹³⁵ Haines, “Weapons, means and methods of warfare”, 276-277.

¹³⁶ William H. Boothby, *Weapons and the Law of Armed Conflict* (Oxford: Oxford University Press, 2009), 207.

¹³⁷ Human Rights Watch, *Rain of Fire*, 4-5.

¹³⁸ Goldstone et al., *Human Rights in Palestine and Other Occupied Arab Territories*, 196 (para. 901).

5.1.2 The Principle of Distinction

The second principle on MacLeod and Rogers' list is the principle of distinction between civilians and civilian objectives on the one hand and combatants and military objectives on the other. This rule is also stated in the 2005 ICRC Study, as Rule 71: "The use of weapons which are by nature indiscriminate is prohibited."¹³⁹ This rule follows from the more general principles laid out in Rule 1, which requires that attacks may only be carried out against combatants and not civilians, and Rule 7, which requires that the parties to a conflict attack military objects only, and never civilian objects.¹⁴⁰ Similar to the principle of no unnecessary suffering or superfluous injury, the ICJ refers to the principle of distinction as a "cardinal principle" of international humanitarian law.¹⁴¹ Dinstein refers to it as "probably the most fundamental pillar" of the law of international armed conflict.¹⁴² The fundamental principles of civilian immunity and distinction between civilians and military are also codified in Additional Protocol I to the Geneva Conventions 1977), Articles 48, 51(2), and 52(2).¹⁴³ Among other weapons types, the legality of landmines has been challenged on this basis.¹⁴⁴

Rule 84 of the 2005 ICRC Study introduces a further specification of the principle when incendiary weapons are used: "If incendiary weapons are used, particular care must be taken to avoid, and in any event to minimise, incidental loss of civilian life, injury to civilians and damage to civilian objects."¹⁴⁵ The rule does not require that the incendiary properties of the weapon be "primary", as in Protocol III of the Convention on Certain Conventional Weapons, so WP weapons are clearly regulated by this rule.

Rule 84, however, goes no further than the general Rules 1 and 7, and has on this basis been criticised for being "entirely superfluous".¹⁴⁶ One could perhaps argue that the words "particular care" indicate that Rule 84 further enhances the requirement

¹³⁹ Henckaerts and Doswald-Beck, *Customary International Humanitarian Law, Volume I: Rules*, 244.

¹⁴⁰ Henckaerts and Doswald-Beck, *Customary International Humanitarian Law, Volume I: Rules*, 3, 25.

¹⁴¹ International Court of Justice, *Legality of the Threat or Use of Nuclear Weapons*, 257 (para. 78). The principle is sometimes referred to as the "principle of discrimination". I choose instead to use the term "distinction", because this is the term used in the Advisory Opinion and in the ICRC Study. See also Antonio Cassese, Guido Acquaviva, Mary Fan, and Alex Whiting: *International Criminal Law: Cases and Commentary* (Oxford: Oxford University Press 2011), 153.

¹⁴² Dinstein, *The Conduct of Hostilities under the Law of International Armed Conflict*, 62.

¹⁴³ *Protocol I Additional to the Geneva Conventions*.

¹⁴⁴ MacLeod and Rogers, "The Use of White Phosphorus and the Law of War", 85.

¹⁴⁵ Henckaerts and Doswald-Beck, *Customary International Humanitarian Law, Volume I: Rules*, 3, 287.

¹⁴⁶ Haines, "Weapons, means and methods of warfare", 275.

for a clear distinction, indicating that this is an even more pressing matter when incendiary weapons are concerned. This line of reasoning seems flawed, however. Boothby has rightly pointed out that the general principle of distinction as specified in Additional Protocol I to the Geneva Conventions, Article 57(2)(ii) requires the attacker to take “all feasible precautions” to avoid damage to civilian persons or objects.¹⁴⁷ It is difficult to see how the demand for “particular care” in using incendiary weapons can exceed the demand for taking “all feasible precautions”.

Regardless, it is clear that none of the rules described above dictate that WP weapons are illegal as such. On this point, Steven Haines has concluded as follows:

On their own, however, the customary norms in Rules 70 and 71 are neither sufficiently persuasive nor prescriptive enough to lead directly to the banning of specific types of weapons. This is something that seems to require formal agreement in the form of treaty law.¹⁴⁸

Although one can question whether Haines’ conclusion would hold for all weapons types, I believe it is accurate in regard to WP weapons specifically. The most common justification of WP weapons is that it is intended to be used as an obscurant. If this mode of application is deployed in the open field with little risk of hurting either combatants or civilians, there is nothing in any of the Rules I described above that would prevent WP weapons from being used legally.

Still, there are reasons for arguing that the principle of distinction may apply to certain applications of WP weapons. Reyhani concludes that the US military was in violation of Rule 84 in Fallujah, which was an urban area and where the risk of causing injury to civilians and civilian objects is likely to have been significant.¹⁴⁹ There is also significant evidence that indicates that WP weapons may have been used in breach of the principle in Operation Cast Lead in Gaza. Human Rights Watch has attempted to document this in its mentioned report.¹⁵⁰ Although the report has been heavily criticised by the Israeli government, it presents convincing evidence that WP weapons were used

¹⁴⁷ Boothby, *Weapons and the Law of Armed Conflict*, 206. This article is considered to be a codification of customary law.

¹⁴⁸ Haines, “Weapons, means and methods of warfare”, 278.

¹⁴⁹ Reyhani, “The Legality of the Use of White Phosphorus”, 91.

¹⁵⁰ Human Rights Watch, *Rain of Fire*, 1-3, 63-65.

over urban areas, in which the risk of civilian injury must have been high (see image and map, below). The Israelis have claimed that their use of WP during the operation was legal, and have particularly stressed that it was used for the creation of smoke screens.¹⁵¹ Two Israeli officers were later reprimanded for the WP attack documented in the image and map below.¹⁵²

Image 3¹⁵³



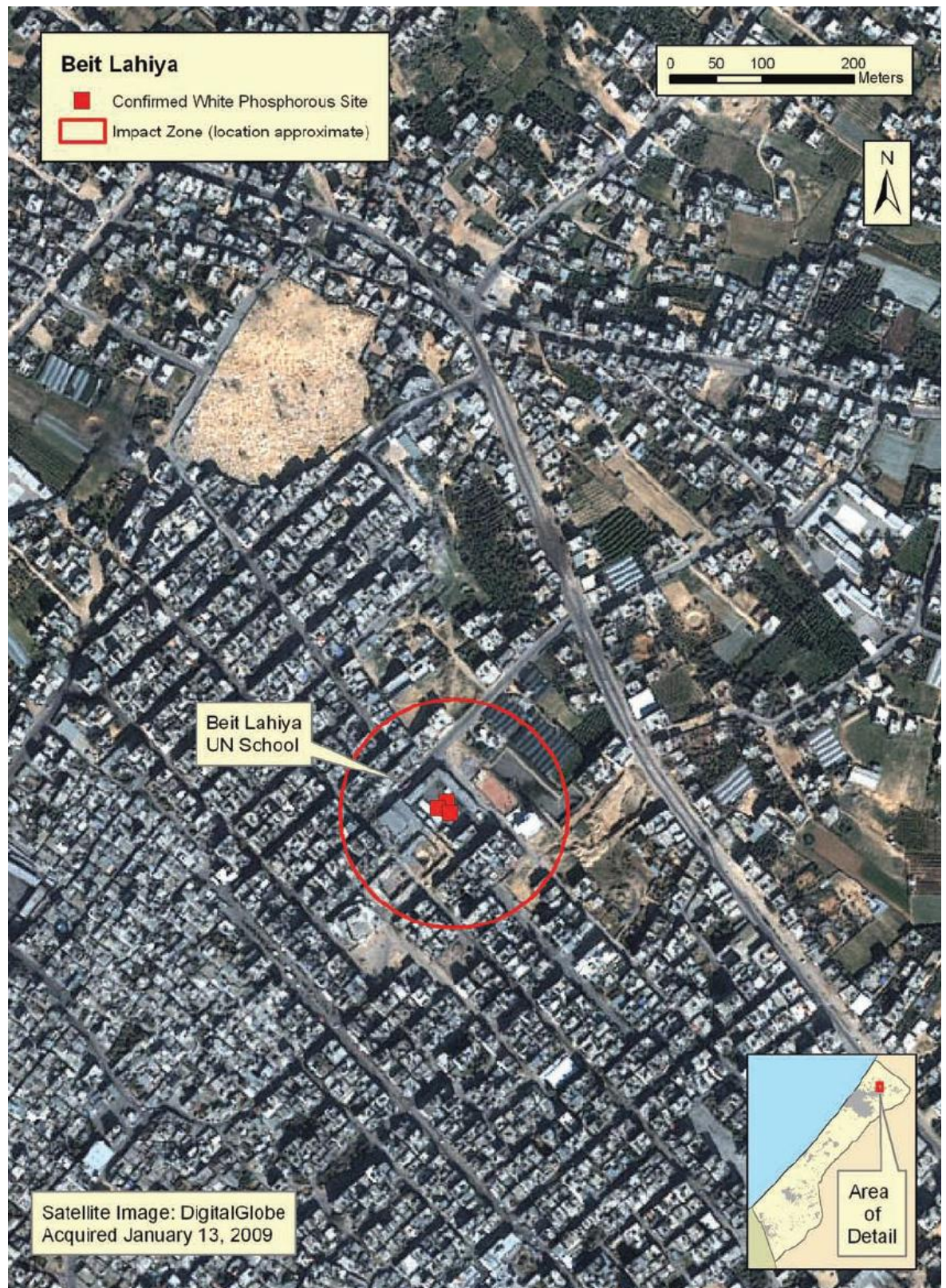
Two brothers aged four and five were killed and 14 others were wounded when white phosphorus shells burst above this UN school in Beit Lahiya on January 17, 2009. © 2009 Getty Images

¹⁵¹ Hider and Frenkel, “Israel admits using white phosphorus in attacks on Gaza”.

¹⁵² Paul Wood, “Israel reprimands officers over UN compound shelling”, *BBC News*, 1 February 2010, accessed on 5 August 2011, http://news.bbc.co.uk/2/hi/middle_east/8490646.stm.

¹⁵³ Image from Human Rights Watch, *Rain of Fire*, 22.

Image 4¹⁵⁴



¹⁵⁴ Map from Human Rights Watch, *Rain of Fire*, 18.

5.1.3 The Martens Clause

The final principle on MacLeod and Rogers' list is that of "abhorrence to ordinary people". They claim that blinding laser weapons fall into this category and are prohibited for that reason.¹⁵⁵ The "abhorrence principle" of MacLeod and Rogers bears strong resemblance to the so-called "Martens clause". This term refers to the paragraph stated in the preamble of Hague Conventions II (1899) and IV (1907); that until a more complete code of laws of war has been issued, the Contracting Parties will recognize that inhabitants remain protected by the laws of humanity and the dictates of the public conscience.¹⁵⁶ The clause can be interpreted to prohibit weapons that arouse "widespread revulsion" in the public.¹⁵⁷

It is curious that MacLeod and Rogers introduce what they label an "abhorrence principle" instead of referring to the Martens clause. This clause is a well-known part of customary international humanitarian law. It is, for example, referred to in many of the cases before the International Criminal Tribunal of Yugoslavia.¹⁵⁸ The International Court of Justice has stated that the Martens clause "has proved to be an effective means of addressing the rapid evolution of military technology".¹⁵⁹ A modern version of the clause is found in Additional Protocol I to the Geneva Conventions, Article 1(2):

In cases not covered by this Protocol or by other international agreements, civilians and combatants remain under the protection and authority of the principles of international

¹⁵⁵ MacLeod and Rogers, "The Use of White Phosphorus and the Law of War", 85.

¹⁵⁶ *Convention (II) with Respect to the Laws and Customs of War on Land and its annex: Regulations concerning the Laws and Customs of War on Land*, The Hague, 29 July 1899, preamble; *Convention (IV) respecting the Laws and Customs of War on Land and its annex: Regulations concerning the Laws and Customs of War on Land*, The Hague, 18 October 1907, preamble. F. de Martens was a Russian delegate to the conferences in Hague in both 1899 and 1907, see Dinstein, *The Conduct of Hostilities under the Law of International Armed Conflict*, 8-9.

¹⁵⁷ Morton, "The Legal Status of Laser Weapons That Blind", 699.

¹⁵⁸ *Prosecutor v. Furundzija*, Judgement (ICTY, Trial Chamber, 10 December 1998), case number IT-95-17/1-T, 52 (para. 137) and 66 (para. 168); *Prosecutor v. Kupreskic et al.*, Judgement (ICTY, Trial Chamber, 14 January 2000), case number IT-95-16-T, 206-207 (paras. 525-526); *Prosecutor v. Martić*, Judgement (ICTY, Trial Chamber, 12 June 2007), case number IT-95-11-T, 167-168 (para. 467).

¹⁵⁹ International Court of Justice, *Legality of the Threat or Use of Nuclear Weapons*, 257 (para. 78).

law derived from established custom, from the principles of humanity and from the dictates of public conscience.¹⁶⁰

There appears to be no significant difference between the “abhorrence principle” and the “Martens clause” in regard to the assessment of the legality of WP weapons. The key words are in the reference to “the principles of humanity and from the dictates of public conscience”. Although these criteria are certainly vague, the formulation is clearly one that would render weapons that cause general revulsion or abhorrence illegal as means of warfare. I will in the following refer to “the Martens clause” rather than “the abhorrence principle”, since the two seem to overlap completely in the context of discussing the legality of WP weapons.

The main problem when arguing that the Martens clause can be interpreted as placing concrete restrictions on certain types of weapons is that the terms are too vague to provide clear guidance. What exactly does it mean to be in compliance with the “principles of humanity” and “the dictates of public conscience”? Who decides what the principles of humanity are and what the public conscience is? Dinstein has argued that the Martens clause cannot constitute an additional standard for judging the legality of specific means and methods of warfare: “General revulsion in the face of a particular conduct during hostilities (even if it transcends fluctuations of public opinion) does not create ‘an independent legal criterion regulating weaponry’ or methods of warfare.”¹⁶¹ In essence, he argues that the Martens clause cannot be seen as positive law, although he believes it can function as a form of mission statement to further develop international humanitarian treaty law.¹⁶²

Dinstein’s opinion runs contrary to that of MacLeod and Rogers, who indicate that the “abhorrence principle” could be seen as positive law.¹⁶³ Gro Nystuen has claimed that the Martens clause can be seen as a form of positive law: “It can [...] be said that the Martens Clause constitutes a fundamental humanitarian restriction on permissible weapons, irrespective of how great a military utility value they might have.”¹⁶⁴ Neither of the above have argued, however, that the Martens clause prohibits

¹⁶⁰ *Protocol (I) Additional to the Geneva Conventions of 12 August 1949*, Article 1(2).

¹⁶¹ Dinstein, *The Conduct of Hostilities under the Law of International Armed Conflict*, 9.

¹⁶² Dinstein, *The Conduct of Hostilities under the Law of International Armed Conflict*, 8-9.

¹⁶³ MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 83.

¹⁶⁴ Nystuen, *Non-lethal weapons and international humanitarian law*, 11-12.

WP weapons as such. There are good reasons for this, as some of the main applications of WP would not be seen as inhumane. For example, there is no reason to believe that the use of WP for creation of a smoke screen in the open field, in which it is unlikely that there are any civilians, would be generally perceived as being contrary to the principles of humanity.

It is also questionable whether the Martens clause can provide any argumentative force behind a claim that certain uses of WP are prohibited when compared with the principles of distinction and of no unnecessary suffering or superfluous injury. It is difficult to think of a case where the use of WP would be considered to be in breach of the Martens clause, but not of the latter two principles. These principles are also more specific and the principle of *lex specialis* should therefore render the Martens clause irrelevant for the question of the present legality of WP weapons.

There may be value added of the Martens clause in this regard, however, if it is read as a “mission statement” of international humanitarian law, rather than as a positive regulation in itself. This is in line with Dinstein’s perception of it.¹⁶⁵ Although one can certainly debate to what extent WP weapons are generally perceived to run contrary to the principles of humanity and the dictates of the public conscience, there are undoubtedly indications of a considerable international sentiment that would favour stronger regulations and possibly a general prohibition of WP weapons. I return to this line of reasoning under the discussion of further codification of IHL in regard to WP weapons.

5.2 Legality of the Uses of White Phosphorus Weapons under Customary International Humanitarian Law

None of the principles of customary international humanitarian law described in this chapter leads to the conclusion that WP weapons should be considered to be prohibited as such. Two of the principles may apply to certain uses of WP weapons, however, namely the principle of no unnecessary suffering or superfluous injury and the principle

¹⁶⁵ Dinstein, *The Conduct of Hostilities under the Law of International Armed Conflict*, 8-9.

of distinction. These principles place no greater restrictions on WP weapons than on other types of weapons. Still, certain features of WP weapons indicate that these rules are of particular relevance under certain circumstances.

Particularly significant in regard to the principle of distinction is the area effect of WP weapons that have been designed for the creation of smoke screens. This application of WP necessitates its delivery over a wider area. It is interesting to note that the “area effects” of a weapon have received increased attention in international law in the past decade. The Convention on Cluster Munitions (2008), for example, stresses the need to “avoid indiscriminate area effects” in its Article 2(2)(c).¹⁶⁶ Bonnie Docherty has commented that “[i]n both its narrow exclusions and condemnation of area effects, the convention’s definition of cluster munitions strengthens precedent for more civilian protections in future weapons treaties.”¹⁶⁷ Many incendiary weapons, including WP weapons designed for air-burst, also have indiscriminate area effects.¹⁶⁸ The principle of the Convention on Cluster Munitions does not have status of customary international law, but can still be a relevant factor to consider when assessing whether specific applications of WP weapons is contrary to international law. For example, the use of WP weapons over populated areas is likely to place civilian persons and objects under considerable risk of injury and damage, as was seen during Operation Cast Lead.

Still, I would not go as far as Human Rights Watch, which claims that “air-bursting WP over populated areas is unlawful because it places civilians at unnecessary risk and its wide dispersal of burning wedges may amount to an indiscriminate attack.”¹⁶⁹ This statement indicates that a general rule can be formulated that it is illegal to use WP weapons over populated areas, in all circumstances. It is conceivable, for example, that air-burst WP could be used as an illuminant and burst at a high enough altitude for it to be of no significant risk to civilian persons and objects. Therefore, the legality of the use of WP weapons must be considered under the circumstances of the individual case. Still, most of the applications of WP weapons described in this dissertation, if used in or over populated areas could under the circumstances be in

¹⁶⁶ *Convention on Cluster Munitions*, 30 May 2008, Article 2(2)(c).

¹⁶⁷ Bonnie Docherty, “Breaking New Ground: The Convention on Cluster Munitions and the Evolution of International Humanitarian Law”, *Human Rights Quarterly*, Volume 31, Number 4 (November 2009): 948.

¹⁶⁸ Docherty, “Breaking New Ground”, 947.

¹⁶⁹ Human Rights Watch, *Rain of Fire*, 2.

violation of the principle of distinction. This includes the applications of marking a target, use as an obscurant, for creation of a smoke screen, for “flushing out” combatants, and certainly for use of WP weapons as an incendiary weapon. The danger posed by using WP burster rounds for illumination purposes may be less, due to their high optimal air-burst altitude. The same can be said for the principle of no unnecessary suffering or superfluous injury. With a basis in the principles that have been suggested through the SIrUS project for testing whether a weapon should be considered to cause unnecessary suffering or superfluous injury, it is certainly possible to argue that WP weapons fall into this category if used directly against combatants. Indeed, the British military has gone far in advising that such use should generally be avoided.¹⁷⁰ Certainly, the use of WP weapons for setting fire to objects and persons and for “flushing out” combatants can under the circumstances be in violation of this principle. However, there must always be an assessment of the level of military necessity in the circumstances of the individual case, including what other means were available for rendering the enemy combatants *hors de combat*. One cannot *à priori* dismiss a claim that the use of WP weapons for “flushing out” combatants under the circumstances may have been militarily necessary.

¹⁷⁰ *The UK Manual of the Law of Armed Conflict*, 112.

6 Conclusions on the Legality of the Modes of Application of White Phosphorus Weapons

What can be concluded about the legality of the five modes of application of WP weapons that were described in the introduction? There are two general conclusions: First, there is no prohibition of WP weapons as such. Second, the risk of violating the principle of distinction seems significant for all the uses of WP discussed here, and more so than many other weapons types because of the “area effect” of these weapons.

The following can be concluded about the specific modes of application of WP weapons, respectively:

1. Use of WP for creation of a smoke screen. This is clearly legal when used in the open field with no significant risk of harming civilian persons or objects. If used over a populated area, however, the action may be illegal due to the principle of distinction.

2. Use of WP burster rounds for illumination. The same applies to this mode of application as for the creation of a smoke screen, except that the danger to civilians on the ground would normally be less, because the optimal air-burst altitude is as high as 500 meters above ground.¹⁷¹

3. Use of WP for marking a target. This mode of application is legal, provided that the principle of distinction is taken into account. The principle of no unnecessary suffering or superfluous injury may also apply, depending on the circumstances.

4. Use of WP for “flushing out” combatants. There is no clear prohibition on the use of WP weapons against combatants. There is a case, however, for arguing that the Chemical Weapons Convention prohibits use of WP for “flushing out”-tactics. WP and its by-product, phosphorus pentoxide, both have toxic properties, and these properties

¹⁷¹ MacLeod and Rogers, “The Use of White Phosphorus and the Law of War”, 77.

seem to be an integral part of the “flushing out” tactic, which for this reason should be regarded as contrary to Chemical Weapons Convention. The use of WP in this tactic is also in breach of Chemical Weapons Convention Article I(5), because WP is used as an RCA. There is, however, significant disagreement in the legal opinions on the matter. Therefore, it should also be mentioned that both the principles of distinction and of no unnecessary suffering or superfluous injury may apply, depending on the circumstances. The latter would certainly apply if there were alternative means available, which could be used to achieve the same military purpose.

5. Use of WP for incendiary purposes. Protocol III of the Convention on Certain Conventional Weapons is relevant, but it does not render illegal the use of WP weapons against combatants or objects that are legitimate military targets. In its restrictions, Protocol III goes no further than what is already part of customary international humanitarian law with regard to the principles of distinction and of no unnecessary suffering or superfluous injury, except in regard to air-delivered WP weapons. The principle of no unnecessary suffering or superfluous injury renders the application of WP weapons directly against combatants illegal, but only if it cannot be justified as militarily necessary.

The above conclusions will of course not gain universal acceptance. The discussion in the previous chapters shows that there is significant disagreement both among states and in published legal opinions about the regulation of WP weapons and the use of these in specific cases. This disagreement seems to result in significant controversy when WP weapons are actually used, notably resulting in debates about the legality of their use in Fallujah in 2004 and in Gaza 2008-2009. These disagreements are mostly over facts, but are nonetheless indicative of the reality that the law is not clear enough to lead to agreement in the actual cases.

The disagreement over the relevance of the Chemical Weapons Convention for the use of WP in Fallujah, for example, is presumably one of facts, and not of law. However, it should be noted in regard to Fallujah, where the use of WP weapons is fairly well documented, there is no agreement on whether the use of WP was reliant on its toxic properties. One should think that this would be easy to establish, but clearly it is not. In regard to Operation Cast Lead, Human Rights Watch concludes that the use of

WP in the specific cases that it documents was illegal – as does the Goldstone report – while the Israelis claim it was legal.¹⁷² Here, international law fails to provide sufficiently clear guidance to resolve a profound disagreement.

It should not be controversial to conclude that there are unsolved problems in regard to the international regulations on WP weapons: It is clear that there is no general prohibition on WP weapons, while it is equally clear that the actual applications of WP weapons is in many cases legally problematic. Furthermore, it seems apparent that the use of WP weapons in the past decade has been widely perceived as unethical, if not actually illegal. This shows that a case can be made for clearer and stronger regulation of WP weapons internationally.

¹⁷² Human Rights Watch, *Rain of Fire*, 1-3, 63-65; Goldstone et al., *Human Rights in Palestine and Other Occupied Arab Territories*, 413 (para. 1919); Hider and Frenkel: “Israel admits using white phosphorus in attacks on Gaza”.

7 The Case for International Regulation of White Phosphorus Weapons

Based on the newspaper coverage of the use of WP in Fallujah and in Gaza, it seems probable that there is a widespread disregard both among governments and in the general public for the use of WP weapons. For example, the Russian Duma (Parliament) issued a statement in 2005 in which it condemned the use of phosphorus bombs under any circumstances and stated that such bombs are banned by international treaties even “under cover of noble aims of the fight against terrorism”.¹⁷³ Another example is a statement by Italian Prime Minister Silvio Berlusconi. In response to questions about whether the Italian government would condemn the US military’s use of WP in Iraq he said that “[i]f white phosphorus was used, condemnation is absolutely inevitable.”¹⁷⁴

There is also significant evidence that a large number of states would be positive to stronger regulation of WP weapons. Following the Human Rights Council’s probe into Operation Cast Lead in Gaza, the Goldstone report was submitted to the Council on 29 September 2009. One of the recommendations was this:

While accepting that white phosphorus is not at this stage proscribed under international law, the Mission considers that the repeated misuse of the substance by the Israeli armed forces during this operation calls into question the wisdom of allowing its continued use without some further degree of control. The Mission understands the need to use obscurants and illuminants for various reasons during military operations and especially in screening troops from observation or enemy fire. There are, however, other screening and illuminating means which are free from the toxicities, volatilities and hazards that are inherent in the chemical white phosphorus. The use of white phosphorus in any form in and around areas dedicated to the health and safety of civilians has been shown to carry very substantial risks. *The Mission therefore believes*

¹⁷³ “Russian Parliament Condemns U.S. Use of Phosphorus Bombs in Iraq”, *AFX News*, 24 November 2005. Cited in Tessier, “Shake & Bake”, 340.

¹⁷⁴ “Berlusconi Pledges to Stay as P.M. for Next Five Years”, *Agence France-Presse*, 23 December 2005. Cited in Tessier, “Shake & Bake”, 340.

that serious consideration should be given to banning the use of white phosphorus as an obscurant [my italics].¹⁷⁵

This paragraph must be read as a recommendation to seriously consider banning WP weapons altogether. In the recommendation section of the report, the Mission writes that “in the Mission's view, the use of WP as an obscurant at least should be banned because of the number and variety of hazards that attach to the use of such a pyrophoric chemical.”¹⁷⁶ Even though the words of the paragraph actually include only the use of WP “as an obscurant”, the reason for the proposed ban must be not to prevent the use of substances that can obscure military movements, but to prevent the misuse of WP weapons that may be initially designed and intended for use as obscurants.

On 15 October 2009, the UN Human Rights Council passed a resolution on the report, in which it:

“Endorses the recommendations contained in the report of the Independent International Fact-Finding Mission, and calls upon all concerned parties including United Nations bodies, to ensure their implementation in accordance with their respective mandates”.¹⁷⁷

In this resolution, the Council thus endorsed all the recommendations in the report, without reservations, including the recommendation regarding WP. The resolution was passed with 25 votes in favour, 6 against and 11 abstaining.

The Goldstone report is 575 pages, and one may question whether all countries thoroughly considered all parts of the report equally worth endorsing. Still, the resolution is quite clear, and one must assume that the votes were cast with an understanding in regard to what recommendations were endorsed. However, the *negative* votes that were cast, as well as the abstentions, may have been founded on other reasons than the recommendation regarding WP. One can therefore not automatically assume that these states were not in favour of the WP recommendation out of the significant number of recommendations in the report.

¹⁷⁵ Goldstone et al. *Human Rights in Palestine and Other Occupied Arab Territories*, 196 (para 901).

¹⁷⁶ Goldstone et al. *Human Rights in Palestine and Other Occupied Arab Territories*, 414 (para. 1924).

¹⁷⁷ UN Human Rights Council resolution A/HRC/RES/S-12/1, 12th Session, 16 October 2009, part B, operative paragraph 3.

Later that year, on 2 November 2009, the United Nations General Assembly passed a resolution following up the report from the Human Rights Council. The General Assembly did not give an indisputable endorsement of the recommendations in the Goldstone report, but it did endorse the report of the Human Rights Council from its 12th Session, which contains the full text of the relevant resolution.¹⁷⁸ The resolution passed with 114 votes in favour, 18 against and 44 abstentions.¹⁷⁹ As with the UN Human Rights Council, the resolution in the General Assembly was not mainly about WP weapons, and attitudes toward WP can thus not explain the voting pattern. However, the recommendation regarding WP is clear in the report, and the wide range of countries that supported the resolution indicates that the call for stronger regulation of WP does not seem improbable.

Another significant indication of states' regard for stronger regulation of WP weapons is the study of state practice in relation to incendiary weapons in general. The 2005 ICRC Study writes that in the discussions in the UN General Assembly that led to the adoption of the additional protocols to the Convention on Certain Conventional Weapons, incendiary weapons were a sensitive issue. A large number of states advocated a total prohibition of their use, and the majority of those who opposed a total ban, did urge strict restrictions in order to avoid civilian casualties.¹⁸⁰ 23 member states submitted formal proposals favouring a total prohibition on the use of incendiary weapons, including against combatants, to the Ad Hoc Committee on Conventional Weapons of the Diplomatic Conference leading to the adoption of the Additional Protocols.¹⁸¹ Official statements in favour of a total ban were also made by a number of states, e.g. China, Madagascar, New Zealand, Peru, Syria, USSR and the UAE.¹⁸²

¹⁷⁸ The UN General Assembly, *Follow-up to the report of the United Nations Fact-Finding Mission on the Gaza Conflict*, A/64/L.11, 2 November 2009, operative paragraph 1. The UN General Assembly, *Report of the Human Rights Council, Twelfth special session (15-16 October 2009)*, A/64/53/Add.1, 16 October 2009, accessed on 10 August 2011, <http://unispal.un.org/UNISPAL.NSF/0/D9FFE810B89C0C5F8525766500518F15>

¹⁷⁹ "By Recorded Vote, General Assembly Urges Israel, Palestinians to Conduct Credible, Independent Investigations into Alleged War Crimes in Gaza", UN press release (New York: UN Department of Public Information, 5 November 2009), accessed on 10 August 2011, <http://www.un.org/News/Press/docs/2009/ga10883.doc.htm>

¹⁸⁰ Henckaerts and Doswald-Beck, *Customary International Humanitarian Law, Volume I: Rules*, 287.

¹⁸¹ Henckaerts and Doswald-Beck, *Customary International Humanitarian Law, Volume I: Rules*, 289.

Afghanistan, Austria, Colombia, Côte d'Ivoire, Egypt, Iran, Kuwait, Lebanon, Lesotho, Mali, Mauritania, Mexico, Norway, Romania, Sudan, Sweden, Tanzania, Tunisia, Venezuela, Yugoslavia and Zaire (although Kuwait had slightly changed its position in 1975.)

However, it was necessary to achieve consensus in the Preparatory Conference for the Convention on Certain Conventional Weapons. A compromise was attempted: To prohibit incendiary weapons against combatants with certain limitations, such as when they would be under armoured protection or in field fortifications, but the United States and to some degree the United Kingdom opposed.¹⁸³ The result was the adoption of Protocol III, which scarcely provides any regulation that is stricter or more precise than that which was already part of customary international humanitarian law. Still, the process shows that there were a significant number of states that favoured a total ban or stronger restrictions on incendiary weapons. It also seems safe to assume that the regulation of incendiary weapons would have been stricter if there had been no demand for consensus when negotiating the Convention on Certain Conventional Weapons. Finally, it is worth noting that some of the opposition to stronger regulation came from the United Kingdom, which in its *Manual of the Law of Armed Conflict* (2004) goes further than Protocol III in restricting its own use of WP.¹⁸⁴

In conclusion, it seems that there may be significant support for imposing tighter restrictions on WP weapons than exist at the present, perhaps up to and including a total ban.

7.1 Stronger restrictions: How?

There are at least three ways to impose stronger international restrictions on WP weapons by treaty. First, WP could be added to the Annex on Chemicals of the Chemical Weapons Convention, which lists the identified chemicals. WP could be added to this list, through the procedure described in Chemical Weapons Convention Article XV (5), see (4). Such an alteration would require at least 2/3 majority in favour of a Conference of State Parties.¹⁸⁵ Adding WP to this list would settle disputes about whether WP weapons do in fact fall under the definitions of “chemical weapons” and “riot control agents”. Such a move would clarify the legality of the “flushing out” tactic,

¹⁸² Henckaerts and Doswald-Beck, *Customary International Humanitarian Law, Volume I: Rules*, 289.

¹⁸³ Henckaerts and Doswald-Beck, *Customary International Humanitarian Law, Volume I: Rules*, 290.

¹⁸⁴ *The UK Manual of the Law of Armed Conflict*, 112.

¹⁸⁵ *Chemical Weapons Convention*, Article VIII(18).

but would not end the debate about the other military applications of WP. The controversy arising from the burn effects of WP on humans would remain.

Second, one could seek to alter the protocols of the Convention on Certain Conventional Weapons, either by revising or adding to Protocol III on incendiary weapons, or by adding a separate protocol on WP weapons, specifically. Either option can be pursued in the format of a Review Conference of the High Contracting Parties.¹⁸⁶ Because of the formal flexibility of the Convention on Certain Conventional Weapons, the state parties to the convention would in principle be free to impose any kind of restriction on WP weapons, from light restrictions to a total ban, while keeping in line with the purposes of the convention.¹⁸⁷ The problem with this path is that alterations require consensus among the High Contracting Parties.¹⁸⁸ With 114 state parties (at the time of writing, August 2011), there is a significant risk that the end result will not be as decisive as the majority of states would perhaps like. On the other hand, the Convention on Certain Conventional Weapons Review Conference of 1995 was able to produce a fairly strong Protocol IV that prohibits the employment of laser weapons.¹⁸⁹

Third, one could seek to construct a convention on WP weapons. This option would have the benefit of avoiding the demand for consensus in altering or adding to the Convention on Certain Conventional Weapons and would entail a greater freedom in regard to the end result than through alteration of the Chemical Weapons Convention. Examples of similar initiatives have been set through the processes that led to the Land Mines Convention and the Convention on Cluster Munitions. It is worth noting that both of these issues were first discussed in context of the Convention on Certain Conventional Weapons, but were then taken out of that forum when consensus on satisfactorily tight restrictions proved unattainable.¹⁹⁰ In this way the Convention on Certain Conventional Weapons has been the launching ground for two of the key

¹⁸⁶ The procedures are described in *Convention on Certain Conventional Weapons*, Article 8(1) and Article 8(2), respectively.

¹⁸⁷ See McClelland, "Conventional Weapons: A Cluster of Developments", 764.

¹⁸⁸ *Convention on Certain Conventional Weapons*, Article 8(1)(a) and Article 8(2)(b), respectively.

¹⁸⁹ *Protocol on Blinding Laser Weapons* (Protocol IV to the 1980 Convention), 13 October 1995. Morton, "The Legal Status of Laser Weapons That Blind", 700-701.

¹⁹⁰ Gro Nystuen: "A New Treaty Banning Cluster Munitions: The Interplay between Disarmament Diplomacy and Humanitarian Requirements", in Cecilia M. Bailliet (ed.): *Security: A Multidisciplinary Normative Approach* (Leiden: Martinus Nijhoff Publishers 2009), 143; Jozef Goldblat, "Land-mines and blinding laser weapons: the Inhumane Weapons Convention Review Conference", *SIPRI Yearbook 1996* (Stockholm: SIPRI, 1996), accessed 10 August 2011 <http://www.sipri.org/yearbook/1996/17>; Docherty, "Breaking New Ground", 941.

weapons conventions in IHL, proving that its Review Conferences are important forums for increasing awareness about central weapons issues confronting the international community.

The third approach, however, is unlikely to lead to new regulations that would be universally ratified in the short or medium term. There is a significant risk that the approach will lead to a further fragmentation of international law, a well-known trend in recent decades.¹⁹¹ In assessing the advantages of the third approach, one would thus need to consider whether it is more desirable to introduce strong regulation for a few states in the hope that others will follow suit – but at the risk of increasing the fragmentation of international law – or to introduce weaker regulation that may be universally acceptable.

¹⁹¹ The phenomenon of fragmentation of international law was the topic of an in-depth report of the International Law Commission in 2006: Martti Koskenniemi et al., *Fragmentation of International Law: Difficulties Arising From the Diversification and Expansion of International Law: Report of the Study Group of the International Law Commission*, A/CN.4/L.682, 13 April 2006; see also Cassimatis, Anthony E., “International Humanitarian Law, International Human Rights Law, and Fragmentation of International Law”, *International and Comparative Law Quarterly* 56 (2007): 623-639.

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